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ORIGINAL COMMUNICATIONS.

THE LOCAL USE OF ACETYL-SALICYLIC ACID (ASPIRIN) IN THE TREATMENT OF FOLLICULAR TONSILLITIS.

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In an article published in *American Medicine* for September, 1906, Dr. C. F. Kieffer calls attention to the efficacy of aspirin locally applied to the tonsils in acute follicular disease. He claims that with this method the patient suffers much less than with any other form of treatment, that the duration of the attack is considerably shortened, and that in no case has rheumatism been a sequel.

I have records of twenty-six private patients on whom I used this method during the past year, and my results have borne out all that is claimed for it. In all but two of the cases the relief afforded was marked and prompt. Of the two in which the treatment was inefficacious, one proved to be virulent diphtheria beginning with the typical appearance of follicular tonsillitis, and in the other the local applications were made by an unskilled friend of the patient, and it therefore should hardly be included in the series.

The technique of the procedure is very simple. When the throat is examined a probe or applicator, cotton-wrapped at the tip, is gently rubbed over the surface of the tonsils. If the latter are very slippery and covered with a film of mucus, as is usually the case, a solution of sodium bicarbonate, 1.0 to 30.0, is mopped over them for the purpose of clearing away the mucus. This, if gently done, is far better than spraying as it causes less gagging and leaves the throat more quiescent for the subsequent treatment. Gargling is likely to be painful and is not nearly so effective in removing the mucus. After the tonsils have been thoroughly cleansed the aspirin, which should have been finely powdered in a mortar, is applied in the following manner: A small flexible applicator is firmly but softly wrapped at the end with cotton, moistened with water, and dipped into the powdered drug. There will be found an excess of the powder gathered on the wet cotton, and this should be removed by tapping the applicator a few times. This little maneuver is quite important, as otherwise, during the rubbing of the tonsil, the excess will drop off and fall into the larynx, usually causing violent paroxysms of coughing, which on account of the inflamed condition of the throat are exceedingly painful. With the probe thus prepared every portion of the tonsillar surface should be carefully and gently rubbed. The upper, lower, and posterior surfaces should not be neglected, and it will usually be necessary to bend the probe at various angles to reach these portions. After one tonsil has been treated the other, even if apparently not diseased, should be gone over similarly, plenty of time being given so as not to excite too greatly the pharyngeal reflexes.

Another method of applying the powder is by means of a blower. I have had a large

silver Eustachian catheter "blunderbussed" at the end, so as to spread the powder, and use it in the following manner: The ring end of the catheter is dipped into the powder, which is then shaken down toward the bell-mouthed end. After the cut-off from the compressed-air tank has been firmly attached to the catheter, the latter is introduced into the mouth and directed toward the tonsil. A quick jet of air, at not over five pounds pressure, spreads the powder fairly evenly over that portion of the tonsil toward which the catheter is pointing. This is repeated until all the available surface of both tonsils has been covered. Whenever it is practicable I add to the technique by spraying the nose and nasopharynx with a warmed solution of sodium bicarbonate, after which I introduce the catheter into the nasopharynx, turn the tip upward, and with a jet of air cover the vault of the pharynx with the powder, thus getting at any possible involvement of the pharyngeal tonsil.

When a patient presents himself with a spotted and acutely inflamed tonsil my procedure is as follows: A smear from the throat is at once sent to an expert bacteriologist to be examined for diphtheria organisms. In this way one can get a report within an hour and save much valuable time. If this is impracticable a culture is taken, and no antitoxin is administered until a positive report comes back, or the local and constitutional symptoms are such as to strongly suggest the presence of true diphtheria. The lymphoid tissue of the throat is then treated as described above and the patient put to bed, a course of fractional doses of calomel followed by a saline laxative ordered, and only soft diet permitted. No antirheumatic drug is administered internally, unless for psychological reasons, since experience has shown that the local application is all that is necessary.

Usually three applications of the aspirin at intervals of twelve hours will be found sufficient. At the end of this time, twenty-four hours in all, the fever and febrile symptoms have usually markedly diminished and the local symptoms greatly ameliorated. At the end of thirty-six hours the patient can as a rule swallow with but a minimum of discomfort. Quite frequently after the first application such relief is obtained that deglutition is readily performed.

The local changes which follow the aspirin applications consist of a marked blanching of the tonsillar surface, combined with slight shrinkage, the whitening of the mucosa remaining for some time after the topical application of the drug, not infrequently until the next visit.

Occasionally one will see a case in which only one tonsil will present the characteristics of a follicular tonsillitis, while the other, with the exception of some congestion, is normal. One case seen last winter in the person of a medical friend presented this picture and naturally inclined me to think more strongly of a diphtheritic than of an ordinary follicular infection. A smear was made, examined at once, and proven to be negative as far as diphtheria was concerned. A thorough application of aspirin to only the affected tonsil secured decided relief, but on the next visit the opposite tonsil showed some swelling with a few indistinct whitish patches at the mouths of the follicles. This was treated similarly, and, probably due to its being caught early, the disease subsided promptly without further treatment. This showed, as was noted later in others, that attacks can be aborted if the patient is seen early enough, and the result of this experience has been that patients who suffer from recurrent attacks of follicular tonsillitis now present themselves on the first suggestion of sore throat and by prompt treatment are usually prevented from having a fully developed attack.

So efficient and so certain has aspirin been in its local use that it can apparently be used as a therapeutic test. There have not been enough cases noted to render this certain, but my experience so far would seem to show that if decided relief is not obtained in twelve hours the affection in all probability is not rheumatic, but dependent upon some other cause, in all likelihood diphtheria.

The citation of individual cases would be tiresome and profitless. So general, so

immediate, and so marked are the results that patients who have had previous attacks are enthusiastic over the relief afforded and no longer look forward with dread to any future attack. They know that they will be able to avoid the week of wretched discomfort usually accompanying the disease and the four or five days in which swallowing is so agonizing that they will suffer the tortures of thirst and the weakness incident to the non-ingestion of food rather than endure the pain caused by attempts at swallowing.

Knowledge of this method of treatment should really receive wide dissemination, since it presents many features of value and marks a distinct advance in therapeutics. The technique is simple, being applicable as readily at the bedside as in the specialist's chair; the rationale is obvious; it can be used with efficacy in all stages of the disease; its immediate results are good; it prevents dangerous sequelæ, and if used early patients are saved an attack of one of the commonest and most pitiably painful diseases in the acute inflammatory class.

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CACTUS GRANDIFLORUS AS A CARDIAC REMEDY.[1]

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I have been using cactus grandiflorus more or less constantly for the last thirty years; or, at least, ever since the appearance of the article written by the elder Dr. A. Flint, of New York. I have had a large experience, and I feel that it is a very valuable remedy which the profession generally do not appreciate. There is no drug that has been so enthusiastically extolled by a number of the profession, and quite as vigorously denounced by others as being entirely valueless as a remedy. The experience that I have had makes me feel that this drug, if of good quality and properly used, should have a better name; for the more I use cactus grandiflorus in selected cases, the greater grows my confidence in it, and I feel satisfied that this remedy has a place in cardiac therapeutics.

I have used it for many years; but after reading some of the experiences of experimenters whose reports seemingly disclosed the fact that it was almost or quite worthless, I ceased using it for a time. However, I soon found that I had lost the assistance of a good faithful remedy, and returned to its use. I am now more convinced of its usefulness than ever before.

The great trouble with many physicians is that they expect too much from this remedy. They think it should cover the whole field of cardiac therapeutics. If they have a case with a faltering heart, a heart that has defied the usual strong remedies, they try cactus grandiflorus, and because it does not immediately strengthen the exceedingly weak and perhaps dying heart they at once condemn it as being of no good whatever. This is not fair, for under the circumstances just cited it is, as it were, using a needle where a crowbar is needed. No one that has been properly instructed in cardiac therapeutics would call cactus a powerful tonic for the heart; for such is not the case. It is a mild cardiac tonic, a supporter and a steadier of that organ when in a weak and irritable condition. It is more like a persuader than like a tractor; largely a regulator, not a mainspring. To use cactus when digitalis is indicated shows bad judgment or a want of knowledge. It is sending a small urchin on an important mission that only a man is fitted for.

This remedy will not favor the production of hypertrophy nor draw in the walls of the heart in dilatation, as will digitalis; neither will it change back to a healthy condition degenerated muscular fiber, and it has very little influence as a diuretic. I feel, however, that when given intelligently, in some of the minor ills of the heart, cactus grandiflorus will do much good. Its use in conditions to which it is not adapted has probably been one of the causes of the small

[1]Read before the American Therapeutical Society, Philadelphia, 1908.

favor in which it is now held. I know that it is a valuable remedy, *more especially when used in combination with other heart tonics,* lending valuable aid to their action.

It will greatly assist other remedies in severe cases, and will not do harm, as some other heart remedies may. It is well borne by the stomach, is effective after long usage, and has no cumulative effect. It is not good in every heart condition, but it has its proper place in cardiac therapeutics, and when used in selected cases is a very useful remedy. It can be used for an indefinite length of time without doing injury to the stomach, the nervous system, or the heart. In simple nervous cardiac weakness, with irregular or tremulous action, it is of great benefit. One additional advantage that it possesses is that in large doses it has no poisonous action. It is a safe remedy. A beneficial remedy usually becomes injurious when used to excess, but this is not true of cactus; and if it does no good, it can do no harm—which is not the case with some other remedies that are given for heart affections.

In none of the cases in which I have used cactus grandiflorus has it seriously disturbed the stomach, except in that of an old woman who seemed to have an idiosyncrasy that prevented her taking this as well as many other remedies. At first I used to give it in the form of a fluid extract, five to ten drops, four times a day. Later I used a tincture, fifteen to twenty-four drops, and during the last fourteen years I have used the extract in pill form, generally associated with other cardiac remedies. I feel assured that when one can get a *good, pure article* it makes but little difference in what form one prescribes it. I feel satisfied that much of the ill repute of this drug comes from "substitution," or the dispensing of an inferior article, often made from other varieties of the cactus family, which are much less efficient.

My experience leads me to believe that it is useful in palpitation of the heart, and in irregularity, whether from the abuse of tea or coffee or of alcohol; also when the irregular heart is associated with heart-strain or any other condition, including dyspnea, hysteria, and hypochondriasis, as well as all emotional irregularities of the organ. It is sometimes beneficial in Graves's disease, when the heart is weak, irregular, and rapid. In functional troubles it is particularly useful; and in the disordered heart associated with and following influenza I have found it of great value, as well as in cardiac asthma. It gives aid and comfort to the aged who are suffering with disturbing circulatory symptoms, such as dyspnea, asthma, and a sensation of weakness in the organ. Given with nitroglycerin in such cases it adds much to the effectiveness of the latter. It is used with good effect in the convalescent stage of exhausting diseases, strengthening the weakened heart, the patient being often cognizant of the great comfort afforded.

When properly administered it is a good remedy in irritable heart, even when associated with aneurism, when digitalis would do positive harm, as it moderately strengthens and slows the heart and seems to control its action. When there is an excited and bounding pulse sometimes this drug soothes and quiets it, by apparently lowering the cardiac tension. Many patients after using this drug say: "My heart now feels comfortable."

Dr. Finley Ellingwood, of Chicago (*Medical Record,* 1905, vol. lxvii), says: "In its administration a small dose will accomplish all the desired results; and observers unite in the statement that large doses are in no way better than those of from two to five minims of the fluid extract." He also states, in the same article, that "cactus improves the nutrition of the heart. It improves the contractile power and energy of that organ, elevates arterial tension, and increases the height and force of the pulse-wave." He further says that it relieves the asthma, and he especially recommends it in atonicity alone—not for exaltation of that organ. He also uses it in excitement of the heart with a feeble pulse. Professor Ellingwood further says that no combination will take its place.

Potter reports that this drug was studied physiologically by Myers, who found that it possessed a decidedly stimulant action on the heart, the arterial tension, and the spinal motor centers.

Engstad (THERAPEUTIC GAZETTE, Sep-

tember, 1890) considers it superior to digitalis in functional disorders, especially angina pectoris, for which it is almost a specific.

J. Fletcher Horne (*Lancet*, Dec. 5, 1891) says that its action appears to be on the cardiac center of the medulla, and thus, through the vagus and sympathetic, to the heart. He also states that it has a sedative action, lowering arterial tension without the dangerous depressing and paralyzing effect of opium and chloral, or even of belladonna, and that it invigorates the cardiac plexus and improves the nutrition of the heart, as shown by the increased tone of the pulse.

P. W. Williams (*Practitioner*) states that it acts chiefly upon the accelerator nerves of the heart and the sympathetic ganglia, shortening the diastole and stimulating the spinal vasomotor nerve centers.

Rubini, of Naples, says it is the counterpart of aconite.

A. R. Cushny says it has no similar action to digitalis.

Dr. Gordon Sharp, of Leeds, writes in a paper (*Practitioner*, 1894, p. 157): "This drug does not possess any stimulant action on the circulation of the kidneys. The slight stimulant action of the resins in the drug is the cause of the increased secretion; and this action is all the influence it has." He is of the opinion that it is of no use as a circulatory remedy; and further, that the resins are the only active part of the drug, and that even those have only a faint action upon the kidneys.

Is there a cause for such diverse reports? Have they all a good proper specimen to experiment with? Why should one experimenter say that it is an effective remedy and another say that it is inert?

What I desire especially to call the attention of the profession to in regard to this remedy is its importance in cardiac therapy, *when given with other cardiac remedies*. One will often obtain some of the most marked results, much more marked than when the remedies are given independently. It seems to fill a niche in cardiac therapeutics that is quite unique. I have frequently given other remedies for a considerable length of time, with little or no effect; but when I have added cactus I have obtained the most happy results. It seems to be most effective when given in full doses with other heart remedies that are used in frequent small doses. I give it in this way in cases of organic disease with much circulatory disturbance, in connection with digitalis, nitroglycerin, caffeine, strophanthus, strychnine, and atropine. Its prolonged use with arsenic and pyrophosphate of iron seems to increase the tonic effects of these drugs in heart cases.

I have frequently observed cases in which a full dose of digitalis caused nausea and vomiting, but in which, when the dose of digitalis was reduced to one-half and cactus added, the nausea disappeared, and the good effects of both medicines were immediately noticed. In fact, the result was quite as good, if not better, than would usually follow the full dose of digitalis. In this connection I would state that I think much of the stomach derangement from digitalis comes from the use of too large doses. In many cases, if half the dose is given and the interval diminished one-half, there will be little or no nausea, and better results from the medicine, for we then get a continuous and even action from proper absorption of the drugs.

It seems to me that cactus stimulates the motor, but more especially the inhibitory, nerves of the heart. It strengthens and improves the systole, increases the muscular energy of the heart, and increases the tone of the organ.

It is often a great comfort to the person suffering with nervous palpitation or irregularity, as it tones up the heart and takes away the disagreeable feeling of weakness that is often present. Its primary action seems to be confined exclusively to the heart, giving that organ increased power by strengthening the motor nerve forces, and exerting a marked governing influence upon the regulating nerves. We are told by some that it raises the blood-pressure. If the heart is slow and weak cactus accelerates it; if weak and rapid, it seems to have a subduing and quieting effect. Its action upon the controlling nerves of the heart is to

steady them, and thus prevent intermittence and irregularity, more especially in functional cases; but often good results are obtained in old or new organic heart disease, when cactus is used in conjunction with other remedies.

I have often observed a more tonic effect upon the heart from three minims of tincture of digitalis combined with fluid extract of cactus grandiflorus five or ten drops, and caffeine one-fourth to one-half grain, than from a large dose of digitalis by itself. Its effects are more lasting than those of other cardiac tonics, such as nitroglycerin and caffeine.

While the action of cactus grandiflorus is, as I have stated, confined to the heart and nerves, it apparently affects the kidneys also; but this action, I think, is no more than should be expected from the improvement in the general circulation. In the same way all the tissues seem to be better nourished. It is not a strong general tonic, but a soothing upholder of the heart and a husbander of its strength. Perhaps the best description of the action of cactus on the heart would be a calming, regulating, mild heart tonic; although in organic disease of the heart, such as valvular disease, dilatation, degeneration of the walls, and myocarditis, when associated with nervous phenomena, such as irregularity and excitement, it is a very valuable adjunct to the stronger heart remedies. In grave cases, however, it should not alone be depended upon.

As illustrative of its uses I shall cite three of the many cases in which it has been given by me in combination, with decided advantage:

Case 1.—A boy with marked mitral disease and dropsy had been taking digitalis and other remedies for a period of two months, without much effect. When cactus was added to the digitalis, caffeine, etc., he began at once to improve in every way. The heart commenced to tone up, and the functions of the liver, stomach, and kidneys improved. As the strength of the heart increased, the dropsy disappeared. This case shows the benefit sometimes derived from combining cactus with other remedies in medicating the heart.

Case 2.—Mr. A., who had an old, degenerated heart, and was greatly troubled with palpitation and markedly conscious of the heart action, had tried various sedative and tonic heart remedies without much seeming result. Finally he was wonderfully benefited by the use of cactus grandiflorus, when combined with nitroglycerin. He said that the pills always gave him immediate and great comfort. He had previously been using the nitroglycerin with doubtful effect.

Case 3.—Dr. S. had marked intermittence and irregularity of the heart, following a severe influenzal attack. This continued for many months. He used all sorts of cardiac remedies in vain. I gave him a pill containing extract of cactus grandiflorus, digitalis, and citrated caffeine, which had the effect of immediately correcting the trouble. I gave him the last two ingredients in small doses. He was quite an aged man, with a weak heart, possibly degenerated. For a long time he had ceased smoking; but when he began to smoke once more his heart at once became irregular and intermittent. This happened every time he resumed smoking. He, however, discovered by experimentation that he could smoke without the occurrence of this trouble if, at the same time, he took one of these pills. About a year later I met him in a street-car, and he said, taking a small bottle of pills out of his pocket: "I can, with these, take comfort in my smoke. Thank God for Dr. Curtin's pills, as they enable me to use tobacco again." He had experimented with digitalis, caffeine, and other remedies without the cactus, but they did not afford him relief.

I have noticed that those who have used cactus grandiflorus beyond the experimental stage have faith in it, while those who employ it least condemn it as useless.

CONCLUSIONS.

1. Be sure that a good reliable specimen of the drug is secured, one that has the proper strength; in other words, one that can be depended upon to do the required work.

2. Cactus is a mild tonic stimulant for the heart, especially acting upon the inhibitory nerves of that organ, relieving it of some of

the unpleasant symptoms such as we often find in the nervously diseased heart. In any case it may subdue the discomfort and sometimes permanently relieve the pain in the region of the heart.

3. It is a valuable adjunct to the other well-known heart remedies, by steadying the heart and aiding its tone, helping to support the weakened organ. I want to emphasize one important point: remember that it is not a strong cardiac tonic or stimulant, therefore it should not be alone depended upon in a seriously diseased heart.

4. Those who expect it to take the place of digitalis do not, in my estimation, know the action of the two drugs, as they are essentially different in their action. Furthermore, cactus is in a class by itself, not being like any other heart remedy.

After reading the foregoing paper I received the following letter from Dr. R. W. Wilcox, of New York City, which explains itself:

In connection with your paper on Cactus I would say that I have satisfactory evidence in my possession which shows that the investigator whom you quote as having found cactus absolutely inert by his experiments never even saw any cactus until after his report was published. Although his attention has been called to this fact, so far as I know he has never corrected his statement. If one cares to make use of a fluid extract of cactus such as may be obtained without difficulty in the pharmacies his sphygmograph will show (*a*) a more rapid pulse and (*b*) increased blood tension. This can be demonstrated without difficulty, and all laboratory experiments either ignorantly or purposely showing the opposite are only reflections upon the scientific honesty of the reporter. Clinical experience is the crucial test, and that is the final word.

Sincerely yours,

REYNOLD WEBB WILCOX.

A NEW METHOD OF CLOSING THE ABDOMINAL WOUND AFTER THE "GRIDIRON" OPERATION WITHOUT USING BURIED SUTURES, BY MEANS OF TWO CROSSED SUTURES OF SILKWORM-GUT.

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In cases of low vitality we find that buried catgut sutures will often become infected, whereas in robust individuals this does not occur.

The following illustration shows a method of closing these wounds which I recently planned, to do away with the buried sutures:

Crossed suture used to close "gridiron" operation; no other sutures used. Photographed six days after operation.

The peritoneum is closed by a purse-string suture, turning all raw edges outward; the ends of this suture are left long after being tied, and are retied over the silkworm-gut sutures where they cross in the bottom of the wound.

Two strong silkworm-gut sutures are passed from within out, including the whole thickness of the abdominal wall down to the peritoneum. The first suture is passed so that it pierces the skin to the inner side and nearer the upper angle of the skin incision, being above the transverse division of the deep muscles; a needle is then threaded on the other end of this suture, and it is passed so as to emerge from the skin diagonally across the skin wound and nearer the lower angle and below the transverse division of the deep muscles.

The other suture is passed in the same way, and when both are tied they should cross near the center of the skin incision and crowd both layers of muscles toward this point, which is the weakest place in the wound.

This is also protected by the filigree formed by the crossing of the sutures and the peritoneal plug which is tied to the silkworm-gut sutures at this point.

I tie these sutures over a small roll of gauze, which can be removed in case they should be tied too tight.

In the case photographed I used a Mechel clip at either end of the wound to close the skin wound.

This method closes all dead spaces, does away with buried sutures, and gives a firmer and stronger approximation of the wound than any other method I have used.

UNTOWARD EFFECTS FOLLOWING THE USE OF MARAGLIANO'S SERUM.[1]

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Within the past year instances of serious untoward effects following the use of diphtheria antitoxin have been quite numerous, and while recovery has been the rule a few have ended fatally. In any event the symptoms of anaphylaxis or proteid hypersusceptibility are most alarming to both patient and physician.

These untoward effects are at present but ill understood as they occur in man, although the phenomena following the injection of serum into animals have been carefully studied and described by Otto and by Rosenau and Anderson.

The minor manifestations of serum intolerance (skin eruptions, edema, joint pains) have been fully described by Von Pirquet and Schick, and have been called by them "serum disease."

It has been shown that if a guinea-pig be injected with a single dose of horse serum, even in large quantities, no ill effects occur. If, however, after an interval of some days the animal is reinjected with serum, death almost always ensues. This hypersusceptibility to serum has been noted after an initial dose so infinitesimal as 1-1,000,000 Cc. Furthermore an animal once sensitized apparently retains this hypersusceptibility throughout its life, and in the case of the female may transmit it to her offspring.

Immunity to this hypersusceptibility may be obtained in one of two ways: first, by repeated injections of the serum during the period of incubation—that is, during the first ten days; or secondly, by recovery from a second injection during the anaphylactic stage (Rosenau and Anderson).

In regard to the less serious evidences of hypersusceptibility—the "serum disease"—Von Pirquet and Schick have shown that there is in man a normal period of incubation for the appearance of these phenomena, namely, eight to thirteen days. This first injection, however, renders the individual sensitive to future injections, so that if a second injection is given from fourteen days to four months after the first one the evidences of serum disease occur almost at once, or at least within twenty-four hours. This they term the "immediate reaction." If the second injection is given after an interval of four months the reaction, while delayed from five to eight days, occurs earlier than the normal interval following the first injection—*i.e.*, eight to thirteen days. This they term the "accelerated reaction."

Thus while man reacts to an initial dose of the serum and the guinea-pig rarely does, they both react to a second injection, although this reaction to the second dose differs in severity and kind.

These briefly stated facts are the essential features of proteid hypersusceptibility as they occur in man and the guinea-pig, and are important to bear in mind in analyzing the phenomena as seen in man following the use of Maragliano's serum.

It may be stated at this point that the following facts were submitted to Drs. Rosenau and Anderson, and that while both

[1]Read at the International Congress on Tuberculosis, Washington, Sept. 30, 1908.

of them unhesitatingly subscribe to the view that the symptoms described undoubtedly come within the category of anaphylaxis they are unable to account for them. They state, however, that there are curious differences between man and the guinea-pig concerning modes of sensitization. The present interest in anaphylaxis seems to warrant reporting these facts, which are hereby submitted without any attempt toward explanation:

The use of Maragliano's serum was begun at the Phipps Institute in 1904. During this year but five cases were treated, the total number of injections given being 117. During the year 1905, 32 additional cases were treated; the total number of injections given to these 37 cases was 952. The details of four additional cases have been furnished to me by Drs. Trudeau and Ravenel; the number of injections given to these four cases was approximately 60, making the total number of injections for the 41 cases 1012. In addition 97 doses were administered to four patients by mouth. The dose by mouth was 2 Cc.; that by the hypodermic method from 1 to 3 Cc. The frequency of the injections varied. Cases treated in the hospital and in private practice were injected every other day, while the dispensary cases, numbering 19, received two injections a week. Of the 41 cases treated by injections, seven (17 per cent) had alarming untoward symptoms, although none ended fatally.

Of the seven cases with alarming symptoms, six presented nearly the same phenomena. Within a minute or two after the injection the patient's face became suffused and there was an expression of great anxiety. There was great difficulty in breathing and a sense of oppression, localized to a great extent over the precordium. The finger-tips became blue and the skin was covered with a clammy sweat. The pulse was very rapid (140 to 160) and almost imperceptible at the wrist. In three there was intense pain in the lumbar region; in one there was nausea and vomiting; and in one the patient screamed as the needle was withdrawn, became very pale, and had muscular tremors. In all there was a feeling of impending death. In all the cases the phenomena passed off almost as rapidly as they began, and in a few moments the patients felt as well as ever. In one case the phenomena were atypical, and should perhaps be excluded. This patient became unconscious, had a feeble pulse and a sense of impending death two days after the sixth injection. Throughout the course of the treatment (27 injections) she was subject to these fainting attacks, although she had never had them before or after the treatment.

In four of the cases the evidences of hypersusceptibility occurred but once, following the third, tenth, twentieth, and twenty-second injection. In three the injections were continued without further trouble. In two cases the evidences of hypersusceptibility occurred after two successive injections (third and fourth and tenth and eleventh). In one the treatment was discontinued, and in the other the injections were continued without further trouble.

The injections in all these cases were made every other day as a rule. At times an interval of several days (later in the treatment) occurred owing to enlarged glands.

The earliest case to react was one on the sixth day after the third injection; the latest on the fiftieth day after the twenty-second injection.

A study of these cases shows that contrary to what one finds in guinea-pigs the evidences of hypersusceptibility were extremely variable in their appearance, developing as they did at irregular intervals after the treatment was instituted. Furthermore, the frequent injections within the first ten days did not develop an immunity, nor did recovery from an attack of anaphylaxis prevent future attacks in two instances.

A fact that may have some bearing on the frequency with which the untoward effects occurred is that all of the cases had advanced or moderately advanced disease. On the other hand the more favorable ambulant cases treated in the dispensary escaped the serious effects, but furnished four of the six instances of "serum disease."

Of the less serious manifestations of hypersusceptibility there were six instances in which the "serum disease" occurred. In three the eruption was urticarial; in three others the character of the eruption was not given. The eruption appeared after the fourth, fourth, sixth, sixth, tenth, and fifteenth injection respectively. In two the urticarial eruption was general; in one it was limited to the enlarged and painful joints; in three the distribution of the eruption was not given. One of the cases developing a rash and painful and enlarged joints (knees and elbows) after the fourth injection had symptoms of marked hypersusceptibility after the twentieth injection.

Of the other phenomena noted in this series, herpes labialis occurred in one; and a herpetic eruption about the site of the injection in three.

There was a severe local inflammatory reaction at the site of the injection in seven. The adjacent glands became enlarged and painful in ten; in several cases the glands were so tender that the injections were stopped for four or five days. Severe joint pain was noted in three and lumbar pain in two.

A REVIEW OF RECENT KNOWLEDGE CONCERNING THE THERAPEUTIC ACTION OF MINERAL WATERS.

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It has been customary in scientific nomenclature to endow the word "therapeutics" with a twofold meaning, and consequently the wide realm of therapy is generally understood to comprise two main subdivisions. Into the first, termed drug therapy, is relegated all facts relating to the chemical action of drugs upon the body; and into the second, or physical therapy, those concerning the action upon the exterior of the body of certain forms of energy. But however consistently this subdivision may be adhered to in theory, it will be found to be inconvenient in actual practice in many instances; perhaps nowhere are inconsistences so liable to occur as in the subject of the present paper. In the treatment of disease by mineral waters, both chemical and physical agencies are invoked, and while on mere superficial consideration we are prone to believe that we are dealing with chemical agencies only in the so-called "drink cures," we are constrained to include the physical element also when considering mineral water therapy as a whole.

That the definition "chemical" or "physical" as applied to "drink cures" or "bath cures" is not strictly speaking correct is disclosed by recent experiments, which have shown that absorption by the skin undoubtedly plays a definite rôle in so-called "bath cures." Thus, a bath containing 12 per cent of sodium chloride is capable of causing an augmentation in the percentage of chlorine in the brain, liver, and spleen, and an increase of chlorides in the urine. These phenomena are to be explained only on the supposition that certain substances are capable of being absorbed by the skin. A still better example is offered by the "oxygen baths," which have lately been introduced. In these baths the liberated oxygen is supposed to produce its effect partly by its rubbing or massaging operation on the skin, and partly through the chemical combination of the gas with the red blood-corpuscles, when absorbed in the pores of the skin and in the lungs. But of far greater difficulty, and indeed of greater importance, is the subject of "drink cures," with which we are more especially concerned in the present paper. In their case we find that not only purely chemical processes but certain other agencies, chiefly physical, are at work upon the countless specialized cells of the body and have their part in the treatment. Justification for this statement is to be found in the practical experience of all medical men practicing at bath resorts or those conversant with the results obtained at these places, viz., that artificial mineral waters do not in any way

correspond, as far as their curative value is concerned, with those obtained from the natural sources.

The existence of certain coöperating psychological factors such as a complete submission to treatment on the part of the patient, due to local influences, the milder disturbance of diet, and above all the more complete removal from the cares of everyday life, do not suffice to explain the very striking discrepancy which exists between the activity of the artificial as against the natural waters.

This discrepancy is rendered all the more apparent by the fact that we are in a position to investigate chemically the composition of natural mineral waters with the utmost technical exactitude, and also so far synthetically to imitate them that the artificial product may be tried in practice and its therapeutic value determined and compared with the natural products. Here again the chemical composition of natural mineral waters as revealed by chemical analysis is insufficient to explain their therapeutic effects as compared with those of synthetic imitations. We are therefore driven to the conclusion that certain properties peculiar to the natural waters must be due to the presence of one or more of their constituents in some condition other than that in which they exist in the artificial waters. It is true that a certain discretionary margin underlies the analytical data derived from the chemical examination of mineral waters. For instance, it is by no means certain whether in a given water the analyst is dealing with a solution of sodium carbonate and potassium sulphate, or one of potassium carbonate and sodium sulphate. In obtaining analytical data of this kind, therefore, we are to a certain extent subservient to the arbitrary power of the chemist who compiles and expresses the results of his analysis to a certain extent aided by his discretion.

Moreover, at the present time, we are yet unable by any means known to chemical science to determine precisely the condition in which exist the salts dissolved in a mineral water of even average complexity. It is only quite recently that a much nearer approach has been made to the determination of their true composition by the aid of not only chemical but also of chemico-physical procedures. By this step recognition is given to the view already emphasized, that in the discovery of the therapeutic possibilities of natural mineral waters we may be dealing not only with a chemical but also with a physical action. It is perchance in the latter, therefore, that the clue must be sought to the discovery of that elusive efficiency shown by the natural water as compared with the artificial.

The physical properties of fluids which we are now about to discuss were first definitely investigated and described by van't Hoff. He discovered that two solutions of different salts possess certain powers of attraction one to the other, to which the term "osmotic pressure" was applied. These powers vary in their intensity according to the solution employed. For instance, when a properly constituted membrane containing a 1-per-cent solution of calcium chloride is immersed in a solution of sodium chloride, water will pass out from within the membrane into the sodium chloride solution, which in course of time will become diluted to the strength required to bring the osmotic pressure conditions of the two solutions to the same level. In other words, they will become isotonic. An examination of the two solutions will show that these osmotic phenomena conform to certain fixed terms, and that they do not depend upon the mass of the dissolved salts but upon the atomic weights. Osmotic pressure is thus directly dependent upon the number of molecules present in the solution, and this number is the measure of the amount of osmosis which will take place. The gramme-molecule is the generally accepted unit for comparison, and it represents in grammes the sum of the atomic weights of the elements constituting the molecule of the dissolved substance. Thus, for instance, the gramme-molecule of sodium chloride is Na 23+Cl 35.5=58.5. The fluid unit being one liter of water, the normal solution of sodium chloride for physico-chemical purposes would therefore be 58.5:1000 and the decinormal solution 5.85:1000.

In this connection also the atoms of the

respective molecules are considered to be made up of particles charged with positive or negative electricity, as the case may be, and these particles are termed "ions." The "ions" are regarded as being conductors of electricity.

When a substance such as sodium chloride is dissolved in water it undergoes disintegration into its component elements—in this case sodium and chloride. When Faraday's experiment is repeated by conducting an electric current through the solution, it will be found that the sodium atom is attracted to the negative pole or cathode and the chlorine atom to the positive pole or anode. Electrically speaking, therefore, sodium is a negative and chlorine a positive element.

Water as a solvent is immeasurably superior to all others. To this no less than to its many other valuable properties is to be ascribed the prominent position occupied by water in the household of Nature, and particularly in the human organism. Pure water may be regarded as a non-conductor of electricity. It has recently been shown from the work of Arrhenius, van't Hoff, Ostwald, Nerust, etc., that in a solution of inorganic salts consisting of anions and kations, even without the passage of an electric current there exists a more or less extensive freedom of movement among the ions and a perceptible electric current, and that therefore the union of ions to form salts is merely a dynamic process based upon the mutual attraction and repulsion of the ions. This physico-chemical process is termed "electrolytic disassociation," and upon it depend all chemical reactions, since not the molecular elements of compounds but the free ions react upon each other to form new combinations. The electrical conductivity of a solution is proportionate to the number of free ions it contains. By determining its conductivity, therefore, it is possible to obtain a definite value with which to represent the number of free ions in a solution, and with this also an accurate expression of the degree of disassociation of the molecule of the substance in solution. When this method is applied to the examination of mineral waters, their compound parts being considered as ions, we find that the therapeutic action is unfortunately difficult of interpretation.

Let us now consider, as far as it is known, the mode of action of mineral waters, and review more particularly the relationship of osmotic pressure to therapeutic effect. For this purpose it is clear that chemically pure water must be our starting-point. The fact that water in a chemically pure state is a direct protoplasmic poison is widely known. The explanation is, of course, that water quickly passes into the cell bodies, and since the salts present in the cells cannot pass out with anything like the same rapidity there ensues a swelling of the cell bodies even to the point of bursting. This result depends upon a difference of osmotic pressure. It is also well known that the greater the degree of purity of the water the less becomes its conductivity and therewith the number of electrolytes present.

Our next step is to apply these considerations to the difference in osmotic pressure exercised respectively by saline solutions and the blood, employing the usual nomenclature of "hypertonic," "isotonic," and "hypotonic" to denote whether the osmotic pressure of the former is greater, equal to, or less than the latter. A convenient method whereby the osmotic pressure of fluids may be rapidly determined is by the observation of their freezing-point.

While pure water freezes at 0° C., ice only begins to be thrown out of saline solutions somewhere under that temperature. The temperature at which the first particle of ice separates out of a fluid is its freezing-point, and the difference between this point and zero gives the degree to which the freezing-point has been lowered by concentration of the fluid. This difference is a constant one for molecules of the same weight, and similarly to the osmotic pressure, it increases proportionately to the degree of concentration. Thus the determination of the freezing-point comes to afford a reliable means of arriving at the osmotic pressure of a fluid. Blood freezes at a point 0.56 of a degree below zero, and gastric juice .36 degrees below zero. It is found that fluids of greater concentration than the gastric juice are diluted in the stomach until

their freezing-point approaches that of the juice, and herein lies the clue to the solution of the questions as to the behavior of mineral waters in the stomach.

According to views which have resulted from recent work on the subject, the stomach is a secreting organ and is but ill provided for the work of absorption. Its function is to prepare ingested material for absorption by the bowel, not only chemically by means of its powerful digestive secretion, but also physically by the aid of the same secretion which brings the higher osmotic tension of the dissolved contents to the level of that of the blood. These fluid contents are rendered isotonic or even hypotonic, a result which is in no inconsiderable degree furthered by the active movements of the organ.

There are pathological conditions of the stomach in which clinical observation has discovered certain abnormalities of the normal tendency of the stomach to lower the osmotic pressure of its contents to the point of isotonism or hypotonism, and these abnormalities have a very important bearing upon the subject of mineral water "drink cures." A point of great significance, for instance, is the length of sojourn of the ingesta in the stomach, since hypertonic solutions remain longer than isotonic or hypotonic solutions. Thus, ferruginous waters which have a very low freezing-point disappear with extreme rapidity from the stomach. The same applies to table waters, hence their value as a means of correcting the very high osmotic pressure possessed by certain wines. Bitter mineral waters, on the other hand, have a very high osmotic pressure, and therefore remain long in the stomach.

It is thus evident that there lies embodied in the foregoing observations the rationale for the clinical experience that in diseases such as dilatation of the stomach, chronic gastritis, etc.—*i.e.*, diseases in which motor insufficiency is a prominent feature—the imbibition of large quantities of strong liquors or concentrated mineral waters is contraindicated, as such beverages are worse than useless for the purpose of diluting the ingesta and so reducing their osmotic pressure. The correct view, with regard to the relationship of food to drink in these cases, would seem to be that a diminution in the work required of the stomach follows naturally upon the dilution of food of high molecular concentration by means of the simultaneous ingestion of fluid the molecular concentration of which is low; that in any case fluids of high osmotic pressure, such as strong alcoholic beverages, are harmful, as they are the means of attracting fluid from the wall of the stomach into its cavity, and in this manner interfere with digestion.

It therefore appears probable that the osmotic pressure of natural mineral waters, as revealed by the lowering of their freezing-point, is a physical consideration of some moment and has an important bearing upon their use, at least in some conditions. It is now necessary, however, to draw attention to another circumstance which has become notorious since the introduction of artificial waters. It is that from the water obtained from natural acidulous springs, used either for drinking or bathing, the carbonic acid gas escapes far more slowly than from the artificial waters. The explanation of this fact has given rise to various theories, the sum of which seems to be that CO_2 is contained or combined in the natural waters in some form other than that in which it is contained or combined in the artificial waters. What is believed to be the best hypothesis at present advanced in connection with this view is that there are in the natural waters, either dissolved or suspended, certain bodies which are capable of hypersaturating themselves with CO_2. These are supposed to be garments or "catalisatories," which, although possessed of no intrinsic chemical properties themselves, are capable of materially assisting extrinsic chemical reactions occurring in the same solution. As an example of the occurrence of this phenomenon elsewhere in chemical science may be cited the well-known property of finely divided platinum in promoting the decomposition of hydrogen peroxide into water and oxygen. This reaction will take place with the presence of so small a quantity of platinum as one three-hundred-and-sixty-thousandth of a milligramme to

one cubic centimeter of hydrogen peroxide. The extraordinary infinitesimal proportions of this amount of platinum may be judged from the fact that such a dilution is twenty times weaker than the percentage of gold in the ocean. When catalytic bodies such as these are capable of exercising a distinctly perceptible effect when so enormously diluted there is good ground for the belief that their immense fund of energy may also be exercised in the direction of therapeutic action. We here arrive, however, upon a field which yet awaits investigation. A parallel instance is to be found in organic chemistry in the possible importance to be ascribed to the work of the so-called "enzymes" in plant life. Within recent years much has been done to elucidate the nature of these bodies by a comparison of synthetical processes with natural processes, especially those occurring in plants, and excellent results have been obtained with the very simplest means. In organic chemistry catalisatories are found represented by chlorophyl and the enzymes, by the agency of which sunlight is made the stimulus for the synthetic activity of plants.

The catalisatories of natural mineral waters correspond to these enzymes in plant life, and to them, as has already been shown, we ascribe to-day definite therapeutic effects.

However this may be, these bodies have still to be submitted to exhaustive study and accurate investigation before we can state positively that it is possible to produce artificial saline solutions which will possess in every respect the same therapeutic effects as those obtained from natural sources.

TREATMENT OF ACUTE INFECTIONS BY SODIUM NUCLEINATE.

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In our opinion the use of *sodium nucleinate* in the treatment of acute infections will soon become more generalized, as the various reports now appearing in the foreign medical journals become more widely known. We have, in this substance, the most efficient means of provoking, within a few hours, an artificial hyperleucocytosis, especially of its polynuclear elements.

Accepting the theory of Metchnikoff, that the white cells are the only elements of the blood actively concerned in the defense of the body against the invasion of microorganisms, both the surgeon and physician will find in this drug a valuable aid in overcoming acute infections.

At a given moment it is in our power, as it were, to call upon all the reserves of the body and hurl them against the invading foe. That this drug has passed the experimental stage, and, practically applied, has been life-saving in its effects, is not only borne out by the published reports of various observers in Europe during the past four years, but recently by the experience of several physicians in this city in a series of over twenty-five cases.

Since more carefully studying the effects of artificial hyperleucocytosis in overcoming acute infections, we cannot fail to be impressed with the belief that the life-saving properties of normal salt solution, as universally used, lie as much on the fact of its producing an artificial leucocytosis as on its direct mechanical effect of filling up the depleted circulation.

Chantemesse and Kahn (*Bull. Acad. de Méd. de Paris,* June 11, 1907) recommended the use of sodium nucleinate in the prophylaxis and treatment of the peritoneal infections of typhoid fever.

Jean Lepine and Popoff reported their experience in treating thirty cases of insanity, and Stern his experience in several cases of syphilis.

Barbier and Leon recently published their conclusions, after treating two cases of infantile tuberculosis and one of serofibrinous pleurisy of tubercular origin, with injections of this substance.

They claim that the indications for its use are in acute affections or in the acute exacerbations of chronic conditions, but not in chronic diseases of slow and progressive evolution.

Jean Lepine in further experiments found

that the injections of 0.25 grm. or 0.30 grm. of sodium nucleinate produced at first a leucolysis, lasting about four hours; then a hyperleucocytosis, reaching its maximum in thirty hours, but sometimes within six or ten hours after the injection. The leucocytosis lasted from six to ten days. The increase in the white corpuscles was always very large, from 14,000 to 20,000 and even 34,000, and the polynuclears were always proportionately in large numbers, 80 per cent and even 89 per cent.

His conclusions, therefore, were that injections of 0.25 grm. or 0.30 grm of sodium nucleinate produced at first a temporary leucolysis, then an enormous leucocytosis, especially of the polynuclear elements. What the effects of these injections are on the opsonins of the blood plasma is not mentioned, but it certainly offers a wide field for further investigation.

The very brief histories of the following ten cases may be of interest in drawing attention to the various conditions in which the drug has been used with apparent excellent results in both infections that have taken place and those expected to occur:

Case 1.—Physician, aged fifty-nine; acute perforating appendicitis; operation; fecal fistula; slow convalescence. About the twenty-eighth day, acute lymphangitis of left leg; high temperature; weak; rapid pulse and pain.

His attending physician, Dr. Cabrera, who was the first to use the drug in this city, gave him an injection of 0.30 grm. sodium nucleinate, followed in twelve hours by another 0.25 grm. There was an immediate drop in the temperature, rapid improvement in the general condition, and recovery.

Case 2.—F. S., child; periappendicular abscess; free pus in the abdominal cavity; postoperative infection; general peritonitis; jaundice; rapid, thready pulse; hopeless condition. On the second day following the operation 18 tubes, each containing 0.05 grm. of sodium nucleinate, were used (three injections of 0.30 grm. each during the twenty-four hours).

The fever and jaundice disappeared within two days; general improvement and recovery.

Case 3.—A woman of forty-two with cancer of the uterus and rectum; 0.25 grm. injected before and after operation. Abdomen remained soft; temperature normal; pulse 90.

Case 4.—Mrs. E.; puerperal phlebitis; injection of 0.25 grm.; immediate disappearance of pain and fever; prompt recovery.

Case 5.—S. M., child, aged seven years; appendicitis; purulent peritonitis; condition very grave; injections of 0.25 grm. of sodium nucleinate two hours after operation; 0.30 grm. the following morning, and another of the same quantity in the evening.

Bowels moved spontaneously thirty-six hours after operation, following an intestinal paralysis of four days' duration; rapid convalescence; recovery.

Case 6.—R. V., child; gangrenous appendicitis; purulent peritonitis, general septicemia; operated upon at noon; injection of 0.25 grm. during the operation; 0.30 grm. the same evening; general condition very serious; temperature 106°; pulse 160; the patient was decidedly improved the following day; another 0.30 grm. during the twenty-four hours; rapid convalescence; recovery.

Case 7.—Miss X.; pyosalpinx, with a continuous daily rise of temperature during three months, accompanied by pain and nausea. Preliminary treatment for operation; three injections of 0.30 grm. during three consecutive days was followed by immediate disappearance of these symptoms.

Case 8.—Man, aged twenty-seven; abscess of the mouth, followed by general septicemia; daily rise of temperature fluctuating between 103° and 104°; night sweats; great emaciation; injections of 0.25 grm. of sodium nucleinate, followed by great improvement in symptoms; recovery.

Case 9.—Acute epiploitis or thrombosis of mesenteric veins following one month after an operation for direct inguinal hernia. Large intra-abdominal inflammatory mass; temperature of 104° and 105°; sixteen days dangerously ill, followed by immediate im-

provement and recovery after two injections of 0.25 grm. of sodium nucleinate.

Case 10.—Man, aged forty-seven; acute phlebitis of the right femoral vein; high temperatures lasting over two weeks, followed by a period of improvement. Sudden increase in the edema and intense pain over anterior crural nerve. This condition lasted ten days, the patient being kept constantly under the influence of morphine. One injection of 0.30 grm. of sodium nucleinate, followed in eight hours by another of 0.25 grm., gave immediate relief. In fact, during the rest of the convalescence, which lasted over four weeks, it was never necessary to give the patient another anodyne, and the edema rapidly disappeared.

I am indebted to Drs. Cabrera, E. Nuñez, and G. Mon for the report of the above cases, besides two of my own. The sodium nucleinate used is put up in sterile tubes, each containing 0.05 grm. of the salt. This substance is a combination of nucleinic acid, derived from fish or the flesh of animals (not yeast), with soda.

The best results have been obtained here with one or two massive doses 0.30 grm. once or twice a day. The injections must be given deep in the muscles, as the one objection to their use is that they are somewhat painful.

THE LOCAL TREATMENT OF ACUTE INFLAMMATIONS OF THE THROAT FROM THE STANDPOINT OF PATHOLOGY.

GOODALE in the *Boston Medical and Surgical Journal* of June 25, 1908, reaches the following conclusions:

1. In a beginning tonsillitis antiseptic applications may perhaps be used with benefit, and their effect, if any, will be to abort the local infection. If the disease is not checked at the outset by the sterilization of the parts, but if it proceeds to the formation of white spots in the crypts with systemic involvement, further application of antiseptics may not only be useless but harmful.

It would appear possible that antiseptics may retard convalescence in two ways: first, by diminishing the number of bacteria in the crypts which are generating toxin, and consequently prolonging the period required for the formation of the requisite amount of antibodies; secondly, by their destructive action upon the tissue cells and phagocytic leucocytes of the host.

2. Forcible application of antiseptics may be followed by increased fever and cervical adenitis, indicating heightened absorption of toxin into the system. This phenomenon may be compared to the depression which follows the injection of too large a dose of vaccine in cases undergoing opsonic treatment.

3. In certain cases in which acute tonsillitis appears to be aborted by local antiseptics, inflammatory manifestations may follow after a day or two in the neighboring regions and last for a number of days or several weeks. Here the possibility is suggested that the checking of the tonsillitis checked also the establishment of immunity, and that for its final accomplishment a longer period of growth of the organism upon the membranes of the nose, larynx, trachea, or bronchi was necessary. In this connection we may recall the protracted duration of nasal diphtheria, as compared with the relatively brief time occupied by the pharyngeal disease.

In closing his paper, the author suggests that here is a fruitful field for further study. If the conclusions to which he has come prove, on fuller investigation, definitely established, we shall have to modify our time-honored treatment of these affections. The author ventures to prophesy our procedure will be approximately as follows: Active early local treatment as at present with guaiacum, silver preparations, etc.; the avoidance of antiseptics when once the disease is definitely under way; and, above all, complete local and general rest. It may be said with truth that the most vigorous and active measure that we can adopt in acute infections of the throat is a consignment of the patient to his bed with avoidance of meddlesome interference.

EDITORIAL.

FEEDING IN TYPHOID FEVER.

We believe that there are few subjects in clinical medicine at the present time which are of greater importance than the question of the proper feeding of patients suffering from typhoid fever. A large number of those physicians who are now in active practice were taught in their medical-school-days to rely entirely upon a milk or broth diet, and furthermore were warned that other forms of food were prone to produce disaster, with particular reference to intestinal hemorrhage and perforation. For more than ten years we have been convinced that the milk and broth diet for typhoid fever patients was entirely inadequate, and that a rigid adherence to it in the majority of instances distinctly decreased the patient's chances of recovery, and we have frequently, in lectures and in the pages of the THERAPEUTIC GAZETTE, urged the necessity of giving an adequate amount of foodstuffs to nearly all patients who were suffering from this disease. During this time a number of other physicians, notably Dr. Shattuck, of Boston, have published papers in which they have advocated a much more liberal diet than that which was customary fifteen years ago, and there is now at hand a mass of statistics which proves very conclusively that such an increased diet is in no way deleterious, but on the contrary is distinctly advantageous.

An exceedingly interesting and valuable communication upon this subject was read before the Section in Medicine of the American Medical Association at its recent meeting in Chicago by Dr. Shaffer, who, in a paper entitled "Metabolism in Typhoid Fever," adduces scientific facts, obtained in the laboratory as well as others obtained at the bedside, in support of the belief that a liberal diet is essential. After pointing out that a considerable part of the loss of weight in typhoid fever patients was due to a loss of water, he proceeds to show that there is a very great loss of body fat, a fact with which we are all familiar, and an equally heavy loss of protein. Thus, he quotes a case reported by Lyman and Klemperer in which there was a loss of 7 pounds of pure muscle tissue in twelve days, and another recorded by Müller in which there was a loss of 5½ pounds of muscle tissue in eight days, and he does not think that these facts are unusual. Indeed, he believes that the equivalent of 1½ pounds of muscle tissue in a single day is not infrequently lost. The reason of this extraordinary loss of fat and protein is the cause of the emaciation and weakness so commonly seen toward the end of typhoid fever and in the stage of convalescence, and there seems to be little doubt that this loss of fat and protein is in direct ratio to the duration of the disease, a fact which one would naturally suppose to exist.

It is manifest that such extraordinary losses cannot but be injurious to the patient, but there are other facts of equal importance which are not so manifest, namely, as Shaffer points out, that the destruction of fat leads to acidosis with a loss of alkali from the tissues until a condition has been produced which is in one sense allied to that sometimes seen in severe cases of diabetes, and for this reason it is not rare for acetone to appear in the urine of typhoid fever patients in considerable quantity. In other words, a patient fed on a low diet during typhoid fever is really suffering from starvation acidosis, and if this be true it is evident that a low diet is distinctly disadvantageous. Furthermore, it is a well-recognized fact in the case of diabetics that the administration of a liberal carbohydrate diet with the object of protecting the body fats is absolutely essential wherever acetonuria becomes marked. Again, it has been pointed out by Ewing in a paper which he read before the Pathological Society of Philadelphia several years ago that many of the symptoms of typhoid fever, in severe cases in which toxemia is marked, are probably due not alone to the poisons produced

by the invading microörganism, but to the autointoxication resulting from the burning of 30 pounds of body tissue in three weeks.

There are, therefore, three states from which the average typhoid fever patient who is fed upon a low diet suffers: First, the infection which produces the toxins; secondly, the combustion of his tissues with its attendant pyrexia; and thirdly, partial starvation, for as we have repeatedly pointed out in these pages, no less than five or six pints of excellent milk have to be ingested by the ordinary adult to provide him with the number of calories which are necessary for the maintenance of normal nutrition, and in the presence of fever an even greater quantity is needful. It is practically impossible for a patient to take as much liquid as this, and in the attempt to do so the stomach is overburdened and the kidneys are required to perform an excessive amount of work in the elimination of large quantities of liquid. This is even more true when broths are employed. It therefore cannot be denied that a patient upon a milk or broth diet is partially starved. Experiments without number have proved that animals and human beings suffering from partial or complete starvation are far more susceptible to the influence of pathogenic organisms than those which receive an adequate quantity of food, and this is still another reason for adequate feeding.

Scientifically and practically the next question which arises, and it is one which is well considered by Shaffer, is whether it is possible to devise a diet which will protect the proteins and fats of the body from excessive loss during the course of this disease. It has been found by a number of investigators experimenting with animals ill with other infections that a full carbohydrate or protein diet did materially protect the body tissues, and Shaffer and Coleman, studying this question in patients suffering from typhoid fever in the Bellevue Hospital, found that they were able to diminish the loss of body nitrogen very markedly by a proper carbohydrate diet to which was added a moderate amount of protein. The carbohydrates are given in far larger amounts than the proteins because it has been proved by a host of investigators that they spare the body protein in health more than any other foodstuffs, and still other investigators have proved that this is true in fever. Fats cannot be given in large quantities because they are difficult of digestion and produce disagreeable symptoms.

It having been proved therefore, both theoretically and practically, that considerable quantities of carbohydrates are distinctly advantageous for typhoid fever patients, the next question which arises is whether there is any objection to the administration of this form of food in adequate quantities. It has been thought by some that the digestion is so impaired in typhoid fever that considerable quantities of food could not be taken, and undoubtedly in very severe cases feebleness of digestion is an important factor. But when one stops to think of the strain which is put upon the digestive apparatus by an attempt to give the patient an adequate quantity of milk, it is at once evident that the possibility of a feeble digestion must be considered as much in the case of a milk diet as in any other form of feeding. We have not infrequently seen in cases of typhoid fever which have come to autopsy a large number of undigested curds of milk throughout the intestine which without doubt have passed so far down this tube as to be useless and distinctly deleterious, producing tympanites and other disagreeable symptoms which were not attributed to the milk as they ought to have been. Recent experiments have also proved that the impairment of digestion in typhoid fever for ordinary foodstuffs is by no means as great as has been thought in the past, and this is particularly so in regard to carbohydrates, as has been proved by Folin.

Another reason for using carbohydrates freely in distinction from protein foods is that liberal proteid diets have been proved to distinctly increase heat production.

Finally, Shaffer points out that the average typhoid fever patient receives at present 50 per cent or less of his energy requirement, or, in other words, is half-starved, and he asks the pertinent question, if starvation is harmful in health why should it be beneficial in typhoid fever?

It is our own custom to administer carbohydrate foods in the form of well-cooked barley, rice, corn-starch, and wheat, deprived of course of all extraneous material, from the end of the first week on through typhoid fever, and in addition such quantities of milk as the patient may be able to take without disgust and discomfort. Not infrequently, indeed almost constantly, such patients also receive from one to four raw or very soft-boiled eggs in every twenty-four hours, each dose of starchy food being accompanied by one of pancreatin or taka-diastase, and each dose of proteid being accompanied by hydrochloric acid and pepsin to hurry digestion.

We have never been able to see that this liberal diet produced any deleterious effects whatever. On the contrary, it is our firm conviction, dependent upon years of observation and trial, that patients fed in this way during the course of typhoid fever have a shorter convalescence, and are in a much better state of nutrition at the end of their febrile process than patients who are fed with milk or broths. Broths, in our experience, have been singularly prone to produce tympanites and diarrhea, probably because they act as culture media for the growth of microörganisms.

Not only can these facts be stated, but it is also a fact, according to our observation, that many cases of typhoid fever, which have a tendency to prolongation of the febrile process at a time when a normal temperature would naturally be expected, are in reality suffering from a condition of starvation in which the host of microörganisms, other than the typhoid bacillus, actively multiply in the system, which is not sufficiently vitalized to overcome them. In other words, when frequent relapses occur and the temperature remains irritable, full feeding is often the speediest method of cure.

At the risk of dwelling too much upon one subject we have brought this matter to the attention of our readers once more because its great importance deserves our careful consideration.

ANOTHER METHOD OF PREVENTING POSTANESTHETIC VOMITING.

Any method which can be devised for the purpose of diminishing that most annoying postanesthetic symptom, vomiting, is one which will receive a cordial reception from the profession, since this condition is one of the most annoying with which physicians and surgeons have to deal. The frequency of its occurrence has been very materially diminished by the general recognition of the fact that heretofore far too much ether has been administered, and with the general employment of the so-called "drop method" of using ether, and again by the recognition of the fact that the patient should be anesthetized and not saturated with the drug. It has been thought by some, too, that the simultaneous administration of oxygen with the ether also diminishes the frequency of the occurrence of vomiting, but the exact value of oxygen gas for this purpose is still to be determined. Certainly less oxygen gas is used to prevent postanesthetic vomiting to-day than a few years ago when the method was first brought forward.

In a recent number of the *Centralblatt für Chirurgie* Ritter states that he has employed constriction of the neck after ether in over sixty cases with the object of producing congestion or hyperemia of the cerebrum, and he claims that not a single one of these sixty patients vomited after the operation. Immediately after the administration of ether he applies a band around the neck tight enough to impede circulation, but not so tight, of course, as to impede respiration. This is kept in place from half an hour to an hour. Ritter also states that when this procedure is carried out the patient emerges from the condition of anesthesia and unconsciousness much more rapidly than under ordinary circumstances.

We have not heard of the employment of this method to any extent as yet in this country, and its importance must be determined by further investigation. If the observations are correct the interesting question arises as to how the good effects are produced. One would suppose that such a constricting band would in-

terfere much more with the escape of venous blood laden with the anesthetic from the brain than with the entrance of fresh blood through the arteries, since the blood-pressure in the arteries is so much greater, their walls are much thicker, and they are more deeply situated. It is possible that certain conditions of irritability of the vomiting center may be produced by a postanesthetic edema of the medulla which this congestion in some way influences. The method is so simple and so strongly recommended by Ritter that it at least deserves a trial.

THE TOXICITY OF TOBACCO SMOKE.

Almost ever since the time when Sir Walter Raleigh introduced the smoking of tobacco into England the question as to the harmfulness of smoking has been debated by the laity and by medical men as well, and notwithstanding the fact that from time to time various writers, professional and otherwise, have published the most violent attacks upon the use of tobacco, it has been used more and more universally. The general consensus of opinion, like the general consensus of opinion concerning the use of alcohol, may be said to be that in moderation it is not harmful, and in many instances possibly beneficial. The question of what is moderation varies, of course, with each individual, and the amount of tobacco which is smoked by one may be actually poisonous when used in a similar quantity by another. There are certain conditions, of course, in which the toxicity or harmfulness of tobacco is materially increased. This is but another way of stating that moderation is a term which must not only be covered by the actual state of the individual but by his surroundings as well. Thus, it is a well-known fact to every one who uses tobacco that a far greater amount of it may be smoked in a day without deleterious effects if the patient is leading a vigorous outdoor life, and many persons who are able to smoke tobacco in any quantity with impunity when living out-of-doors find it essential to limit the quantity very materially when they lead an indoor, or sedentary, existence. So extraordinary is this difference in the same individual under different conditions that it is recognized universally by the laity, and the question is often asked why this difference should exist, since it is difficult to conceive that an outdoor life can materially alter or influence the effect of nicotine upon the human body.

Although nicotine is, in concentrated form, one of the most powerful poisons, and although it is generally considered as being the chief factor in producing disagreeable symptoms following the use of tobacco, it has long been recognized by those who are well posted that the greater portion of nicotine is destroyed by the combustion processes when tobacco is smoked, and that comparatively small quantities of this active principle enter the body. On the other hand, it is well known that pyridine is taken into the body in tobacco smoke in considerable quantities, and that pyridine is an active agent. For many years it has also been recognized that tobacco smoke contains very considerable proportions of carbon monoxide, a gas which is universally recognized as being exceedingly poisonous, and one which readily combines with the hemoglobin of the blood, forming a compound which is not readily broken up, and thereby induces prolonged effects, much more prolonged than those which are caused by many other gases which enter the blood.

In a recent number of the London *Lancet* some interesting facts are presented in regard to this matter from which it would seem to be proved that many of the disagreeable symptoms produced by tobacco smoke are not due to any peculiar educts of the drug itself, but to the carbon monoxide gas which the user of the weed inhales or takes into his mouth. According to the *Lancet* it has been calculated that one ounce of tobacco, when smoked, gives as much as from one to four pints of carbon monoxide gas when used in the form of a cigarette, and that the same amount of tobacco when smoked in a pipe gives two and a half to five pints of the gas, seeming to indicate that tobacco is more injurious when a pipe is used than when in the much-maligned cigarette. The fact, however, that tobacco smoke from a pipe is rarely inhaled, and the

smoke from a cigarette is almost universally inhaled, explains the fact that cigarette smoking is more harmful than pipe smoking.

It is pointed out with exceptional clearness that the symptoms which often develop in those who use tobacco to excess consist in dizziness and shortness of breath on exertion, with more or less functional cardiac disturbance, and it is interesting to note that these symptoms are also produced by the inhalation of carbon monoxide. This is the more important when we recall the fact that so small a quantity as 0.17 per cent of the gas, when mixed with air, causes distress, that 0.2 per cent may be fatal to animals, and that 0.4 per cent almost invariably causes death. It is still more interesting to note that the presence of carbon monoxide is probably the explanation of the fact that those living an outdoor life and taking exercise can use such large quantities of tobacco with comparative impunity, since under these circumstances the interchange of air in the lungs is more complete at each respiration, and the whole process of aeration and oxidation goes on more rapidly in these persons. The presence of carbon monoxide gas is also the probable explanation of the fact that smoking in a badly ventilated room is exceedingly prone to produce dizziness and other disagreeable sensations. As is well known, these disagreeable symptoms are most apt to occur when tobacco is freely used in a smoking-car or other place where the ventilation is poor, in which the air is laden with the smoke given off from many pipes or cigarettes, and carbon monoxide and carbon dioxide from human and other sources are not rarely present in excess quantities. We have seen more than one case in which perfectly healthy individuals have suffered from various forms of cardiac distress, probably due to tobacco, after taking long journeys in smoking compartments in which the air was laden with tobacco smoke and the exhalations commonly given off by healthy lungs. It would seem necessary, therefore, to revise our opinion that nicotine is the chief factor in producing disagreeable effects when tobacco is smoked, and that to carbon monoxide gas must be laid most of the symptoms which are so well known to habitual users of large quantities of this drug.

THE CURE OF THE AFTER-RESULTS OF PROSTATECTOMY.

To surgical attendants in large city hospitals, to which those poor in purse and bodily crippled are most likely to drift, it is well known that prostatectomy, at its best a life-saving and rejuvenating operation, is at its worst often followed by sequelæ more immediately crippling and intolerable than the symptoms for which the operation was originally undertaken. Of these the most harassing are perhaps incontinence of urine and urethrorectal fistula. For the relief of these conditions there has heretofore been proposed no systematized course of treatment which afforded a fair promise of cure. Alexander (*Annals of Surgery*, August, 1908) on the basis of a large experience in the Bellevue Hospital has devised a treatment for these unfortunates and has applied it with brilliant success. In some of his cases the non-obstructing part of the prostate only had been removed; these required a second prostatectomy. In other cases the anterior rectum had been torn, and they exhibited at the time of their admission to the hospital large urethrorectal fistulæ. The perineum in these latter cases was little more than scar tissue, owing to ineffectual attempts to repair the damage.

The principle upon which Alexander based his treatment was to restore whenever necessary the perineum, the rectal wall, and the urethra to a condition as nearly approaching the normal as possible. Thereafter to teach the individual by exercise, to use what remained to him of the urogenital sphincter muscle, so that he might acquire voluntary control over the retention and expulsion of urine.

When the control of urination by voluntary effort is attained, automatic control will follow as a physiological necessity.

Any atonic or damaged muscle may be made to act, and the power of its action gradually be increased by proper exercises.

It is the method of application of these principles of physiology to the act of urination that constitutes the virtue of Alexander's treatment.

In regard to the closure of urethrorectal fistulæ, Alexander states that he has been able to close these fistulæ permanently by a single operation, and by methods which, while they require experience and careful nursing, can be successfully employed by any competent surgeon.

It is necessary, first, to determine whether all obstructing portions of the prostate, especially intravesical projections, have been removed and whether the bladder is free from calculi. When these conditions are present they should be removed, and the prostatic urethra and vesical orifice should be made even and smooth to the touch before an attempt is made to close the urethrorectal fistula. To close the fistula the patient is prepared by a few days' purgation with castor oil, and the bowel is washed out thoroughly at the time of operation.

With the patient in the lithotomy position, a curved incision is made in the perineum in front of the anus, extending from one tuberosity of the ischium to the other; the central portion of the perineum is divided, and the dissection is carried upward between the rectum and the prostate so as to expose the wall of the rectum externally for at least half an inch above the upper margin of the fistula.

This dissection is to an inexperienced surgeon difficult; for after the prostate has been removed the tissues are very thin between the rectum and the urethra. It will be found that more space in the perineal wound can be obtained by dividing the origin of the transversus perinei muscles from the ischium, or at least the more superficial part of these muscles.

The edges of the fistula should be separated from the urethra by cutting with a sharp knife and scissors and not by blunt dissection. The edges of the urethra at the seat of the fistula should be carefully refreshed by cutting away all overgrowing mucous membrane from the urethra, but the urethra should not be sutured.

The tissues about the fistulous opening in the rectal wall are then refreshed with curved scissors and made smooth. All hemorrhage should be stopped and the wound made as dry as possible. The opening in the rectal wall is then closed by interrupted Lembert sutures of chromicized catgut placed from the perineal side by means of a round curved needle. These sutures should not include the mucous membrane of the bowel. One suture should be placed well above the upper margin of the opening and one well below the lower margin. It will be found convenient to introduce the sutures from below upward, and not to tie any suture until all have been placed.

After the opening into the rectum has been closed the bladder and bowel are to be irrigated by means of a metal tube. During this process the bowel should not be distended. No drainage-tube is put into the bladder.

To protect the line of suture in the rectal wall Alexander has devised the following expedient: A small triangle of gauze consisting of six or eight layers is made to fit the wound. The apex of this triangle is carried by forceps up to and behind the vesical orifice. Between the layers of gauze a 10-per-cent iodoform ointment, made with vaselin, is injected from a glass syringe, and the little pad is then plastered down so as to fit the posterior surface of the perineal wound accurately.

As the urine flows from the bladder over this pad it is shed off as is water from a duck's back.

The gauze is to be changed twice or three times a day, or oftener if the pad becomes displaced.

The external wound is then dressed by gauze pads to absorb the urine as it flows out of the wound.

The patient's bowels are usually confined by opium for one week. He is then given a dose of castor oil, and Alexander personally superintends the giving of the enema at the time of the first movement. On each day during the first week a metal tube is introduced into the rectum, and the lower bowel is washed out without distending it, after which one or two drachms of iodoform ointment is injected into the rectum. The peri-

neal wound is given the most careful attention during cicatrization so that it will fill in from the bottom without tension. Sounds are passed after the first ten days as they may be required to keep the urethra free from stricture and to make its walls smooth.

After restoration of the rectal wall and of the perineum these cases may be treated as those of incontinence not complicated by urethrorectal fistulæ. The inability to retain urine is manifested in the following ways: There may be what is practically if not literally a complete incontinence. The action of the urogenital sphincter seems to be abolished, and the urine dribbles from the penis almost as fast as it flows from the ureters into the bladder. The flow is usually intermittent, and corresponds to the intermittent flow from the ureters.

The bladder may be able to retain a small quantity of urine, but when this amount is exceeded there is leakage. The leakage may be intermittent, occurring at certain times during the day. There is often no leakage during sleep, nor for several hours after rising in the morning, but toward evening, when the patient becomes physically tired, there is more or less incontinence.

The patient may have perfect control while sitting or lying down, but when standing or walking there is involuntary leakage.

There may be leakage immediately after the urinary act, caused by retained urine in the urethra as the result of an atonic condition of the urethral walls.

These different degrees of disability are subject to infinite variation.

The effect of this inability to retain the urine, upon the minds of men naturally feeble, or made feeble by sickness and by disappointment, is often lamentable. And it is very necessary to arouse in the minds of these patients the hope that their disability is not a permanent one. The influence of suggestion here is undoubtedly great, and no time or pains should be spared to impress them with the reasonableness of a promise to cure them. This is essential, because without the hearty and intelligent coöperation of the individual patient a cure is impossible. On this account, and to accomplish the best results, Alexander has adopted the plan of treating several patients together in the hospital, so that those who are beginning to be taught to gain urinary control may be encouraged by those who have been taught, or who are at least further advanced toward a cure than they themselves are.

The method of instruction must vary with each case, but a general idea of the plan pursued in most cases may be given in outline.

The principle of treatment is to make the individual learn by practice to exercise voluntary control over what remains of the urogenital sphincter, thus to prevent the escape of urine. If this can be done, automatic control follows as a physiological necessity.

The difficulties to be overcome are greater than they might at first seem because in some of these cases there has been a very extensive destruction of the urogenital sphincter, by the improper performance of the prostatectomy. Yet even in the seemingly hopeless cases it is surprising to find how readily the parts remaining of this complex muscular mechanism may be trained to compensatory work.

The first step in accomplishing this result is to accustom the individual to moderate bladder distention. A catheter is introduced through the urethra and a warm saline solution is injected. The quantity injected should be just short of that sufficient to excite vesical contraction and a desire to pass urine. The catheter is then closed by the finger, and the individual is instructed and urged to exert himself to retain his urine; this is continued for several minutes; then continuing to urge the patient to "hold his water," the catheter is withdrawn. The fluid from the bladder is usually at first expelled, but the patient is urged during the entire time to prevent its escape.

This procedure is repeated several times and with varying quantities of fluid.

After a few days it will be found that the ability to retain some of the fluid injected is acquired. This fact should be pointed out to the patient and he should be encouraged in his efforts. He should be

instructed to make voluntary effort to control the escape of urine whenever he can.

After he has acquired the ability to control the injected fluid in the recumbent position, he is taught to control it when moving, when getting out of bed, when sitting down, and when performing certain mild calisthenic exercises, as raising first one foot, then the other foot; sitting down, and then arising. These actions are at first done with deliberation, then more rapidly.

In order to prevent leakage it is important to see that the urethra is completely emptied after each act of urination. In old men whose muscular structures are relaxed, or in whom the accelerator urinæ muscle has been injured, the urethra does not empty itself, and the presence of urine in the canal excites the contractility of the bladder and causes dribbling of urine. The patient is instructed to press upon the perineum with the fingers and to strip the urethra after each act of urination.

As soon as he has acquired any voluntary control, he should be instructed to urinate at frequent intervals, and each act of urination should consist of an exercise of interrupted urination, viz., to begin the act, to cut off the flow; to begin again, to control the flow.

At first all of these exercises must be done under supervision; and the rapidity with which the results are obtained will depend in a measure upon the intelligence of the individual and his coöperation in the treatment. An ignorant, discouraged, sulky old man is hard to teach; but it can be done if one gives the time and energy necessary.

Though this treatment may savor of psychotherapy, which doubtless it is, the results attained by it in cases heretofore regarded as incurable are convincing.

DIFFUSE PERITONITIS IN WOMEN.

Diffuse peritonitis, meaning by this term not necessarily an involvement of the entire peritoneal surface, but the presence of an infection free in the peritoneal cavity, is as it occurs clinically usually secondary to lesions of the appendix. Macdonald (*Surgery, Gynecology, and Obstetrics,* September, 1908) quotes a series of statistics to the effect that of 338 cases appendicitis was the cause in 218. Bowel ulcer was the causative factor in 140, gastric ulcer in 27, and infection of the gall-bladder in 8, whilst extension of infection in pelvic inflammatory disease caused peritonitis in 38 cases. In his own series of cases of diffuse peritonitis observed in women Macdonald notes a larger percentage of cases from pelvic causes and observes the frequency with which staphylococcic peritonitis is associated with endocarditis, quoting Otten to the effect that this complication develops in 25 per cent of cases, whilst in the streptococcic infection it develops in a trifle over 4 per cent. Moreover, in staphylococcic peritonitis metastatic abscess is the rule rather than the exception. Bacillus coli peritonitis is marked by a large amount of pus which has often a fetid odor. Gonococcus peritonitis is characterized by an increase in pulse-rate, more rapid than that noted in other forms of the infection.

As to pneumococcic peritonitis, Armand and Bowen's collection of 91 cases occurring in children is cited, these authors having noted that the pus is usually encysted and the peritoneal infection is secondary to some remote pneumococcal lesion. The characteristic of this form of infection is the plastic exudate, rich in fibrin, which causes adhesions and encapsulation. In the severe form the entire mass of intestines may adhere together and be surrounded by pus. The onset of acute peritonitis is soon followed by a chronic stage, with mild symptoms and indefinite masses on palpation. Though this infection might be suspected from the thin, odorless, greenish-yellow pus, the diagnosis must be based on bacteriological examination. The prognosis, though favorable, is only so providing the case be treated operatively.

Cummins is quoted to the effect that tuberculosis of the peritoneal cavity occurs in three per cent of all autopsies, and that of all forms of peritonitis 25 per cent are tuberculous. Genital tuberculosis is responsible for 40 per cent of the cases in females, and the average mortality is about three per cent. The primary focus of the disease is usually to be found; the peritoneal involvement is

greatest in extent near the seat of local infection. The fibrinous form of disease is said to give the greatest percentage of cure and the ulcerative the smallest.

Peritonitis incident to perforation may readily occur in the course of a tuberculous peritoneal process. It is characterized by an aggravation of the chronic condition, lack of harmony between pulse and temperature, slight meteorism, rigid abdomen, extension of the area of dulness, and vomiting. In this form of perforation operation is said to offer little hope, since the perforation cannot be found because of its small size and the fact that it is usually hidden by inflammatory exudate.

Peritonitis in the puerperium may be of lymphatic origin due to infection of the genital canal passing through the softened uterine and pelvic tissues and involving the peritoneum, usually streptococcic and severe, or to the lighting up of a previous focus of infection.

Getter has reported 21 cases in which in spite of normal labors infection of previously existing cyst had occurred and led to fatal peritonitis. Infection is usually due to the colon bacillus and is wide-spread and severe. In Patton's collection of 321 cases of ovarian cyst in pregnancy there were 95 cases treated expectantly until labor. Torsion of the pedicle occurred 29 times, 4 times during labor and 25 times during the puerperium. Rupture happened 13 times, 3 before and 10 after or during labor. There were 25 deaths in the 95 cases. The infection of ovarian cyst is especially liable to occur in the early puerperium. Appendicitis is also likely to cause extensive and fatal peritonitis in pregnancy.

As to the diagnosis of diffuse peritonitis in the early stage, Macdonald regards rigidity as the most diagnostic single symptom. After this follows pain, which he attributes mainly to the accompanying lymphangitis. Tenderness on palpation he states is not usually a marked symptom unless there has been some effort at repair. It is usually slight in puerperal diffuse peritonitis and marked in the less acute forms, as in the pneumococcic and gonococcic peritonitis. Vomiting is a constant symptom. Temperature is invariably high and pulse hurried. There is a diminution in red cells, which is more marked in puerperal peritonitis than in the non-pregnant. The leucocyte count is less in the pregnant than in the non-pregnant. Iodophilia is regarded as a useful sign and is considered as dependent upon the amount of toxemia, hence is of especial value in the profoundly toxic cases characterized by a low leucocyte count.

As to treatment, Macdonald observes that in women the cause of peritonitis being pelvic in half the cases, pelvic or vaginal operation can often eradicate the cause of the disease without disturbing the upper part of the abdominal cavity. In diffuse peritonitis of the lymphatic type associated with pregnancy, it is often impossible to eradicate any one focus of infection, and abdominal operation, beyond the relief of tension, gives but little help in the cure of the disease. He believes that this type of peritonitis is best treated by the expectant method, with abstinence from food or liquids, rectal feeding, and saline infusions by the bowel, until the condition becomes localized or cured.

Where a focus of infection such as a ruptured ovarian cyst or a pus tube can be removed it seems only reasonable to prevent the addition of infective material by its removal with as little operative trauma as possible.

The Fowler-Murphy method by elevation of the head and rectal infusions by the gravity bag are regarded as of major importance in treatment. The use of nucleinate of soda and nucleic acid as a means of increasing leucocytosis is commended.

The best that can be said for the polyvalent antistreptococcic serum is that its use does no harm and it should certainly be given a trial in all cases of streptococcus peritoneal infection.

From theoretical considerations staphylococcus vaccine is recommended in the more prolonged staphylococcus peritoneal infections.

Macdonald is in accord with the common practice of the day when he limits the operative treatment of diffuse peritonitis to the removal of the focus of the disease with as little trauma as possible.

REPORTS ON THERAPEUTIC PROGRESS.

MERCURY AND TUBERCULOSIS.

BERNART, writing in the *New York Medical Journal* of July 27, 1908, states there is little doubt that mercury administered so as to gain an intensive action without the production of toxic symptoms exerts a beneficial influence over some varieties of tuberculous infection; just what conditions are the most favorably influenced remain to be decided. It has been the practice of the author for some years to use mercury intravenously for the routine treatment of syphilis, so the author hopes he can add what he calls "a mite" to an interesting subject. A survey of his statistics some months ago (preparatory to the publishing of an article on syphilis, not tuberculosis) showed that he had treated 422 syphilitics by the intravenous method, and had given 9838 injections, of which 9446 were of mercuric chloride, 327 of mercuric cyanide, 32 of sublamine (ethylenediamine mercury sulphate), and 33 of mercuric iodide. The average dose of mercuric chloride was 0.02 gramme (1/3 grain).

Among the 327 patients treated with mercuric chloride were several with tuberculosis, from whom general observations were made. These observations at the time were not made for specific publication, as they apparently were foreign to his subject in view, but the topic of mercury in tuberculosis prompts this informal report.

Before citing the influence of mercury injections upon the tuberculous cases it might be of advantage to show that mercury, when given by injections, possesses certain actions exclusive of its antisyphilitic ones; this especially applies to the mercuric chloride. This drug when injected in full doses has a decided antithermic action in nearly all cases where the fever is the result of some germ invasion. Besides this, it also exerts what might be termed a sedative influence—that is, it decreases the nervous tension, or, as the patient expresses it, it makes him lazy and indolent. This latter action might be the result of a mild metallic poisoning. In view of this it is not at all surprising that certain tuberculous patients at first seem to be favorably influenced by this method of treatment.

The general observations made on the syphilotuberculous patients of this series were as follows:

1. That the control of the active syphilis in many of the tuberculous patients seemed for the time to benefit the tuberculosis also.

2. That in patients with pulmonary tuberculosis, after the first control of the syphilis and if the treatment was continuously pushed, a few months would show a gradual aggravation of the tuberculosis.

3. That the genito-urinary tuberculous patients, outside of the benefit to their syphilis, showed no improvement in their tuberculosis.

4. That two patients with tuberculous eye trouble were benefited, one markedly so and the other but moderately so. This is not surprising, as the intravenous injections of mercuric chloride exert a decided and beneficial influence over infections and ulcerations of the eye.

5. That the patients with pulmonary tuberculosis, evidently suffering from the absorption of septic materials, probably due to a secondary germ infection, were decidedly benefited up to a certain point, after which, if the mercurial treatment was continued, their retrogression was rapid.

Regarding the sending of tuberculous patients, as suggested editorially, to the various spas, such as Hot Springs, Ark., for the reason that they can probably tolerate larger doses of mercury there than elsewhere, the author can only say that after five years of the general impression in vogue, and this impression undoubtedly emanated from experience that, so far as the tuberculosis is concerned, syphilotuberculous patients do not do well under the treatment

at that place. This impression may not be due to the use of mercury, but to the overdosing with the iodides, a habit nearly universally prevalent at the Springs.

THE OPSONIC TREATMENT OF DISEASE.

In the *New York Medical Journal* of June 27, 1908, ILLMAN and DUNCAN write on this topic. In their conclusions the authors state that vaccine therapy offers a chance of cure in many cases of disease heretofore regarded as incurable.

That in the large majority of cases stock vaccines are just as efficient as autogenous vaccines.

That cases can be treated with fewer actual index observations than was at first supposed.

That cases treated with the clinical phenomena alone as a guide should only be so treated by some one well versed in vaccine therapy, and then only after having been under previous observation for a period long enough to have determined "the phase" the patient is in.

That very small initial doses should be employed when the opsonic index has not been previously determined.

That the best results at the present time are obtained in tuberculous conditions and staphylococcic or streptococcic infections, as in acne, etc.

That to get the best results vaccine treatment must be instituted as soon as the diagnosis is made.

MERCURY AND ACUTE SYPHILITIC NEPHRITIS.

BALLAGI in the *New York Medical Journal* of June 27, 1908, says, concerning mercury, that he does not think its action on the kidneys is sufficiently cleared up. Mercurial poisoning (stomatitis) is a very common occurrence, so we ought to see more of its effects on the kidneys. But cases of mercurial nephritis are so rare as to be worth publishing. Wilson reports a case ending fatally after administering eighty-four grains of calomel in fourteen days. But his case is not instructive, the dose of mercury being far over the limit. Almost any kidney would be deranged when the patient was taking such enormous doses of any active drug. Further, Wilson's patient was suffering with pericarditis and insufficiency of the mitral, aortic, and tricuspid valves, consequently with a very much impeded circulation and metabolism. Wilson's other cited cases would weigh more, too, if they were not examples of exceptional idiosyncrasy against mercury. What we need to know is whether regular doses of mercury are capable of exciting albuminuria or nephritis. As to the experience of the author with syphilitic patients, he never has had occasion to restrict or stop mercury on account of urinary troubles. Maybe some of his patients did have a slight albuminuria in the course of the disease, but the every-day general practice is not the field where such cases can be easily detected if not accompanied by some special complaint or symptom.

The closing remarks made by Wilson, the author partly concurs with. The first one is a good suggestion—that in every case in which mercury is to be administered for a longer period a careful urinalysis should be made. But when nephritis complicates an existing syphilis he is of a different opinion. He would "except those cases in which it is possible to trace the renal disability to a syphilitic infection." Then the author thinks that no one needs to be afraid to employ an energetic antisyphilitic cure with mercury, supposing that is otherwise indicated, too. What a good dose of mercury can do, the case the author reports clearly shows.

Much depends on the mode of administering and the preparations used. Internal administration and inunctions are more dangerous. Wilson and Heller prefer the injection of soluble salts, particularly the bichloride. So does the writer. The insoluble preparations—metallic mercury, mercury salicylate, calomel, etc.—are either too slow or their effect is cumulative. Gottheil sets off as a great advantage of the insoluble salts the following: "By the injection of a dose of the insoluble compounds a medicinal depot, as it were, is established into

the tissues." This sounds well, but is rather a disadvantage. We do not give drugs to remain in the body an incalculable and unlimited period. On the contrary, medicines, after having developed their specific action on the tissues, are expected to leave the organism—the sooner the better. Welander, of Stockholm, calls special attention to the danger of producing "depots" by injecting insoluble mercury in the tissues, and relates several cases from his practice with very bad complications. He admits the relative harmlessness of the salicylate, on account of its earlier elimination.

The author warns everybody against the injection of calomel or gray oil. In a paper read before the Homestead Branch of the Allegheny County Medical Society in January, 1906, he reported a case from his own practice of a young woman who had eight such "medicinal depots" of calomel in her body. They did not trouble her until after the eighth injection, but then, all of a sudden, such toxic symptoms developed that all these depots had to be surgically removed to save her life. Fortunately, the injections were made in the muscles of the back. Since that time (it happened in 1894) the author has never used calomel for injections. With the corrosive (five-per-cent solution) the author never had any unpleasant experience.

THE OPHTHALMIC REACTION IN THE DIAGNOSIS OF TUBERCULOUS CONDITIONS.

PELTON writing on this topic in the *New York Medical Journal* of June 27, 1908, reaches the following conclusions:

1. The ophthalmic test is an aid of some value in the diagnosis of tuberculous conditions of the lungs, but in many instances is unnecessary since the diagnosis may be assured by the examination of the sputum and by physical examination of the chest. However, in incipient cases with equivocal signs the test may be of distinct assistance provided its results can be relied upon. Whether reliance is to be placed upon it or not further study of the reaction will show.

2. In lupus vulgaris and tuberculides of the type of necrotic granuloma (follicles) the ophthalmic reaction seems to afford a very material help in the diagnosis of the condition.

COMPOSITION OF LARGE CURDS IN INFANTS' STOOLS.

In the *Boston Medical and Surgical Journal* of June 11, 1908, TALBOT states large curds in infants' stools are composed of some proteid (probably casein or one of its derivatives), which on coagulating entangles the milk fat in its meshes. The amount of fat in the curds depends on the amount of fat in the milk, and as this fat increases it replaces the proteid in the curd. The presence of large curds, which has been taken by some investigators to indicate an increase of gastric HCl, can with as great probability be interpreted as indicating a lack of HCl.

THE TUBERCULIN INUNCTION.

MORO, of Munich, in the *New York Medical Journal* of June 27, 1908, describes his method as follows:

The writer rubs into the skin of the chest or abdomen, over an area of 4 cubic inches, a piece of the following ointment of the size of a pea for about half a minute, and permits the ointment to remain on the surface of the skin to spontaneously absorb. The effect of this inunction is observed on the following day or later. The ointment is prescribed thus:

> Koch's old tuberculin, 5 Cc.;
> Anhydrous wool-fat, 5 grammes.

The result is positive when small papules appear over the area of the inunction or in its immediate vicinity, and negative when the skin shows no changes of any kind. With the positive reaction one often observes only a few very pale papules. Occasionally the papules are very numerous and red, and only exceptionally the skin in the region of the inunction is very much reddened and itches. The papules usually disappear at the end of a week. Other local or general symptoms have not been observed.

A positive result obtained by this method

is as conclusive for a present or previous tuberculous infection as is that obtained by the conjunctival reaction or cutaneous methods of von Pirquet.

By comparing the effects of the author's method and that of von Pirquet upon a large number of patients, the following differences were seen: (1) In advanced cases of tuberculosis the skin loses earlier its reactionary power to the inunction. (2) in cases showing no clinical signs of tuberculosis the percentage of positive results is much smaller in the inunction method.

As opposed to the conjunctival and subcutaneous applications the inunction is entirely harmless. The patients never object to its use.

The author's investigations have been only upon children. In the Munich medical clinics of Prof. Friedrich von Müller and Prof. Josef von Bauer, however, the efficiency of his method has been proved on adults.

PROPHYLACTIC INJECTIONS OF DEAD STREPTOCOCCI IN SCARLET FEVER.

The *Medical Record* of June 27, 1908, calls attention in an editorial to this topic. It begins by stating that of all European countries Russia shows the greatest morbidity as well as mortality from scarlet fever, and it is perhaps this fact that has led the Russian physicians to special activity in devising methods to fight the frightful epidemics that often take place in the villages. The results of their efforts have remained for the most part unknown to the American profession, being published chiefly in the Russian journals, yet they have been striking enough in recent years to deserve attention of the entire medical profession. Some years ago Gabritchevsky began to use injections of dead streptococci in the treatment and prevention of the disease, sharing the view of those who saw in that organism the specific cause of the disease. This view was strengthened in his mind by the similarity of the symptoms of the disease in human beings with those of an infectious adenitis of horses caused by the streptococcus.

Accordingly, Gabritchevsky isolated a streptococcus from the heart blood of children dying of scarlatina and then grew it on the usual artificial media. The first experiments with the dead cultures were made by him on himself and on his children, and after these proved to him the harmlessness of the procedure he supplied the vaccines in large quantities to the Russian profession. From that time till April, 1908, 37,000 persons have been treated in accordance with his ideas, over 50,000 injections having been made, for it was soon seen that repeated treatment was much better than a single injection of the dead bacilli. The injection is usually followed by redness, a slight rash, and some swelling at the site of the puncture; the regional lymph nodes often become swollen and painful; the temperature is slightly elevated; the child becomes irritable, weak, and loses its appetite; but all these symptoms disappear in a few days.

The preventive value of the injections may be judged by some instances quoted in an article by Danilow in *Russkii Vrach* of May 17, 1908. In two villages where scarlet fever appeared all the children were immediately vaccinated. In the first village no more cases of the disease occurred among children, but two unvaccinated adults were infected; in the second village the vaccinated children remained healthy, but a boy who came from another place on a visit was taken with the fever. Dreyling tells of vaccinating six children of a peasant's family, the seventh, a little girl, having hidden herself to escape the injection. Four days later she developed scarlet fever. Another unvaccinated child was admitted to the hospital together with an elder sister who was to act as nurse; she had been vaccinated and remained free of the disease, though constantly in the scarlatina ward. In another family the elder children were vaccinated, but the parents refused to permit the treatment for themselves and for two babies. In a few days three of the unvaccinated adults came down with the disease; then the youngest children were vaccinated and remained healthy. The general effects

of the vaccinations are best seen in the figures of morbidity given by Danilow. Only 1.1 per cent of all the vaccinated persons were taken sick with scarlet fever; of those vaccinated once 1.21 per cent were later attacked by the disease, 0.73 per cent of those vaccinated twice, and 1.09 per cent of those vaccinated three times being affected. The total mortality from scarlet fever of the vaccinated persons was but 0.123 per cent; the mortality of those who became sick without the prophylactic injections was 11.1 per cent. During the epidemics many cases of course must have been injected while in the incubation period of the disease, and cannot therefore be used to calculate the prophylactic effect of the treatment.

The above results obtained in the last two and a half years deserve attention from the physicians of other lands as well as of Russia. Since the ravages of diphtheria have been successfully diminished by the antitoxin treatment, scarlet fever has remained the one great disease of childhood, dangerous in itself and bringing with it a host of complications that may kill the child soon after the original disease, or make him a weakling or an invalid throughout life. Gabritchevsky's method should certainly be tried wherever possible so that its value in the treatment and prophylaxis of scarlet fever may soon be determined.

ANTEPARTUM AND POSTPARTUM HEMORRHAGE.

BARRINGTON in the *Australasian Medical Gazette* of June 20, 1908, states that immediate treatment in the main is directed toward restoration of the suspended activity of the uterine muscle, in order to insure its continuous contraction. For success it is essential in the majority of cases to plan a definite course of action and to know the successive steps thoroughly. The plan must be methodical, and implies that the failure of each reliable measure in turn requires promptly the adoption of a subsequent more serious maneuver. Such a plan is as follows:

1. Manipulation of the uterus per abdomen. If the hemorrhage starts after the birth of the child and is not checked by massage of the fundus, ascertain if the placenta is in the uterus or vagina. If in the uterus, try fuller massage for a short time. If this does not check the bleeding, or if the placenta is in the vagina, resort to manual expression of the placenta by Credé's method, if possible, and then stimulate the fundus by friction and compression with both hands. If the placenta cannot be expressed,

2. Clear out the uterus. Place the patient in the cross-bed position, pass a catheter, remove the whole placenta and membranes by the gloved right hand, working in conjunction with the left hand on the abdomen. Then give a hot intra-uterine douche of lysol (1 drachm to the quart) and administer ergotin hypodermically. These measures suffice for all but the most serious cases. If the placenta has been previously expressed and bleeding persists, do not waste time by douching out the uterus, but immediately adopt

3. Bimanual compression of the uterus, it being now evident that evacuation of the uterine cavity fails to induce proper retraction, and the inertia is intractable. Compress the fundus firmly between the closed right hand in the vagina and the other on the abdominal wall, and keep up firm compression until the contraction of the uterine muscle is well maintained for some time, to enable the organ to recover its tone. A hot intra-uterine douche may then be given. Direct pressure on the bleeding organ and the placental site must control the hemorrhage from the utero-placental vessels. There is no case of placental site hemorrhage which cannot at once be completely controlled by bimanual compression provided the uterus has been previously emptied of its contained blood-clots and placental fragments by the hand.

4. Tamponade of the uterine cavity with iodoform gauze. Being satisfied that the uterus is completely emptied, pass a posterior speculum, and pull the uterus well down after seizing the anterior and posterior lips of the cervix with bullet-forceps; support the outside of the uterus with the

left hand, and rapidly pass the gauze with the hand or long forceps in such a manner as to tightly pack the whole uterus and the vagina down to the vulva. The gauze is to be removed in from twelve to twenty-four hours, and an antiseptic intra-uterine douche given.

It is hardly necessary to add that the most rigorous aseptic technique must be observed in all intra-uterine manipulations, which can be very materially aided by a rubber-gloved right hand.

The last step in all cases is external tamponing of the uterus. Place pads or towels on the abdominal wall above the fundus and apply firmly the binder, which should always be ready before labor.

Finally, in regard to placental site hemorrhage, it must be clearly understood that while a systematic method is advocated in the majority of cases, it is impossible to follow a stereotyped plan in all cases. Special cases, and these the minority, need special treatment. In cases of great urgency, therefore, lose no time, but use at once a method that will immediately stop the hemorrhage—*e.g.*, immediate and complete evacuation of the secundines promptly followed by bimanual compression of the uterus.

Treatment of Traumatic Postpartum Hemorrhage.—If the hemorrhage is continuous, and continues in spite of a completely emptied and well-contracted uterus, it must be traumatic and may originate in the neighborhood of the clitoris, but usually from deep lateral tears of the perineum or laceration of the cervix, which may extend to the vaginal roof. Catgut sutures deeply passed by a curved needle and tightly tied will completely control the hemorrhage.

Restorative Treatment in Posthemorrhagic Collapse.—The hemorrhage, whether ante- or postpartum, having been controlled, it is imperative to counteract the effect of the severe blood loss and the resultant collapse. The indications for treatment are threefold:

1. To stimulate the heart, alcohol by mouth, strychnine hypodermically, coffee and brandy enemata.

2. To keep the blood in the important organs—*i.e.*, the brain and viscera—by raising the foot of the bed.

3. To increase the amount of fluids in the blood-vessels: by giving plenty of diluent drinks by the mouth, by administration of normal saline enemata, and by the infusion of sterilized saline solution into a vein or into the loose cellular tissue of the axilla. In really bad cases—*i.e.*, when the patient is cold, blanched, with a feeble, almost uncountable pulse—her interests will be best served by immediately infusing warm normal saline solution into the median basilic vein, the fluid being slowly run in at a foot elevation, until two or three pints have been given. In addition, the patient must be allowed the greatest possible amount of fresh air by opening all the windows, and kept warm with hot guarded bottles and overspread blankets. The obstetrician will need to stay for some time by the patient until the fear of renewed hemorrhage or secondary collapse is past.

Finally, seeing that postpartum hemorrhage may occur without warning in any case of labor, the obstetrical outfit should contain a posterior speculum (preferably weighted), a strong volsellum, speculum forceps, needles and needle holder, iodoform gauze for uterine tamponade, an infusion needle, and the apparatus necessary for venous infusion.

THE X-RAY TREATMENT OF EXOPHTHALMIC GOITRE.

In the *Liverpool Medico-Chirurgical Journal* for July, 1908, HOLLAND reports his experiences with this method as follows:

1. In nearly all the cases carefully noted there was an immediate drop in the pulse-rate following upon the first three or four exposures, and this in some of the cases was very noticeable. Further, the pulse-rate remained reduced.

2. The muscular tremors and general nervousness, also, almost always showed signs of improvement from the first, and continued to improve during the course of the treatment. In two of the cases the pulse became normal and the tremors, etc., quite disappeared.

3. The circumference of the neck, taken

over the most prominent part of the gland, in some cases diminished notably, whilst in others no diminution in size occurred. Perhaps what was more noticeable was that in cases in which the gland was tense and hard and in which there was throbbing, almost always, and after a few exposures, the gland became softer and less tense and the throbbing diminished.

4. The exophthalmos was not materially altered in any of the cases in which it was a marked feature. In two or three it was thought both by the writer and the patient's friends that there was some improvement, but at any rate it was small.

One danger must, the author thinks, be guarded against. In one case, when about 120 exposures of ten minutes each were given in one year, and where cure was reported, the patient was shown, and presented some symptoms suggestive of myxedema. A friend who has also treated a few cases has told him that one of his patients also developed this condition. Although myxedema can be comparatively easily dealt with, it is a question whether the patient would consider it a benefit to be cured of one disease and given another. In future cases the author would be inclined to treat only one side of the gland first.

The author states that he is certainly of the opinion that *x*-ray treatment is of value, and of course there is no reason why it should not be combined with the usual medicinal methods. Early cases will probably prove to be those which *x*-rays will influence most favorably. It is still one of the drawbacks of treatment by *x*-rays that most of the cases referred to his department have already run the gauntlet of all the other departments, and are, so to speak, sent to *x*-rays as a last resort, and perhaps also to be got rid of; and this will apply to a very large number of the patients suffering from all kinds of complaints on whom the *x*-rays are tried. The result of this is disappointment, and the *x*-rays get blamed for not accomplishing the impossible. Occasionally some brilliant result is brought about by *x*-ray treatment; but although this is instructive the author believes it would be of more value to know the effect in earlier cases more likely to be amenable to treatment.

CHLORETONE.

In the *Revista de Medicina y Cirujía de la Habana* of August 25, 1908, Dr. VENTO of the Medical School of Havana contributes a paper upon this well-known drug, in which he reaches the following conclusions with reference to the treatment of epilepsy by chloretone:

1. Chloretone exerts a selective action over the excitomotor function, since it sometimes prevents, at others arrests, and then again at others it diminishes what might be called the expression of that functional disturbance, the convulsion.

2. It may be prescribed, like bromide of potassium, for nervous hyperexcitability.

3. Chloretone exerts a preventive influence over the epileptic attack.

4. From the experience gained thus far with this therapeutic agent the author cannot conclude that it has a curative effect.

In view of the results obtained, and with the confidence acquired through his experience with epileptics, he commenced to prescribe it in various mental pathological conditions, especially in acute mania, and generally in all those cases in which the cerebral excitomotor function is found altered.

On account of the difficulty in dissolving chloretone, he has always ordered chloretone in capsules; and where the patient has refused to take them, or where through maniacal excitement the patient destroys them and spits out the chloretone, it has been given in powder, suspended in hot water or milk (20 to 30 grammes of vehicle). He has never given chloretone hypodermically, but always by the mouth.

The daily amount prescribed has varied between 0.10 and 3.50 grammes. Usually, and when insomnia is the only trouble to contend with, the author prescribes 25 centigrammes in one capsule, and in epileptics as high as 35 centigrammes in a capsule at night on going to bed. It is in acute mania

and to combat excitability that he commences with a high dose, one gramme daily in three capsules, a dose which is increased up to 3.50 grammes. The difficulty to control agitation in maniacs is well known, as is also the resisting power they have to large doses of sedative medicines.

The general effects of chloretone are as follows: It produces a light sleep, we might call it physiological; the mental processes become slow, which explains why the drug does not cause dreams, much less nightmares. When its administration is prolonged through several consecutive days a condition of mental hebetude is observed, the patients exhibiting no desire to talk nor to move; they remain seated and quiet, sleeping frequently. When its administration is prolonged many days in doses higher than one gramme daily, the pulse becomes small and slow, respiration less frequent and of less extent, and temperature falls slightly; but in doses of 35 centigrammes the above is not observed, the action of chloretone being limited then to the production of sleep and diminution of the general excitability. In some cases the patients have complained of headache on awaking, but this is not the rule.

The digestive function at times suffers some alteration. The patients under treatment with high doses, and frequently with even smaller doses, lose appetite gradually until it becomes completely absent. The breath becomes fetid and constipation follows. All these disturbances disappear with the suspension of the use of the medicine.

Chloretone exerts no injurious action over the blood constituents. Vento has observed nothing abnormal after repeated analysis, not even in patients subjected to high doses during many consecutive days.

THE TREATMENT OF TRACHOMA.

In the course of an article on this subject in the *Practitioner* for August, 1908, ORMOND states that the most important consequences of trachoma are opacities of the cornea and cicatrization of the conjunctiva. The former are unfortunately usually central, and greatly interfere with vision; they are also diffuse, and an iridectomy is seldom of any value. With regard to this point the experience of the author is that a careful inspection with a magnifying glass, the pupil being dilated, and a good light brought to bear on it, often reveals fine corneal opacities which to the naked eye are invisible; irregular refraction will also be visible with a retinoscopic mirror. The only cases in which an iridectomy is of real value are those in which the opacity has a distinct line of demarcation, the rest of the cornea being perfectly clear. In all other cases the "stop" action of the iris is so valuable that iridectomy cannot fail to aggravate the patient's condition. The opacities then must be attacked directly. In so far as the opacity is due to the presence of organized fibrous tissue, the result of ulceration of the cornea, the chances of improving the condition are small; but undoubtedly a certain amount of the opacity is due to inflammatory products which may be absorbed, and the best means for obtaining this result is to keep up a slight irritation of the eye by means of stimulating medicaments, such as sulphate of copper, sulphate of zinc, yellow oxide of mercury, dionin, etc.—the first two being best applied in the form of drops, 1 to 4 grains to the ounce, two or three times a day—the mercury as an ointment, and the dionin as drops of 5 to 10 or even 15 per cent applied once or twice a week. This latter drug, in these strengths, produces a marked edema of the conjunctival tissue, due to a dilatation of the lymphatics; by this means absorption is increased.

A method of treating dense opacities, by producing serious and violent inflammation by means of jequiritol, has been in vogue for years, but its efficacy is adversely criticized by some; undoubtedly fibrous tissue may undergo softening and absorption, as the result of the changes following acute inflammation, but the treatment may of course lead to serious results and should not be undertaken "unadvisedly, lightly, or wantonly." The author's experience is,

however, that in suitable cases it is distinctly useful.

Fibrolysin, which is a combination of thiosinamin and sodium salicylate, is reported to have been of value in softening scar tissue, by being injected into the gluteus muscle, but the writer has had no experience with it and others have reported its inutility.

A NOTE ON THE TREATMENT OF MUCOUS COLITIS.

RANSOME states in the *Liverpool Medico-Chirurgical Journal* for July that mucous colitis, for the purpose of this paper at least, is best considered as a clinical entity with the following characteristics:

1. The patient is of a hysterical or neurasthenic temperament.

2. There is a history of prolonged and obstinate constipation.

3. There are paroxysmal attacks of abdominal pain, followed or accompanied by the passage of mucus of varying appearance.

4. There are intervals, of varying extent, of apparent good health between the attacks.

5. The mucus is non-inflammatory—*i.e.*, contains practically no cellular elements.

6. No cause for obstruction or inflammation can be found in connection with the bowel.

Treatment.—There are only two really distinct forms of treatment for this complaint which are worthy of consideration. These are Von Noorden's and the so-called Plombières or intestinal lavage system.

Von Noorden's treatment is essentially one of diet, but in place of the usual bland, unirritating diet with little residue, even now recommended by high authorities in the treatment of mucous colic, Von Noorden advocates a coarse laxative diet, leaving as large a residue as possible. He prevents the usual irritating effect of such a diet by adding to it large quantities of fat in various forms.

The most important element in his diet is cellulose, obtained from vegetables and the husks of various leguminous plants.

As Von Noorden says, the cellulose undergoes bacterial decomposition in the intestine, and so gradually that the binding together of the feces into solid hard lumps is prevented.

The author then gives the details of Von Noorden's treatment as he has carried it out in practice. To begin with, it must be borne in mind, first, that the subjects of mucous colitis are usually neurotic, and secondly, that the treatment is a "trying" one, especially at its commencement.

For these reasons it is better that the patient should be isolated in a nursing home with a firm but sympathetic nurse, and that the physician in charge should encourage perseverance and instil the patient's mind with confidence in the result of the treatment.

The treatment should be carried out in the same way, whether it is commenced during an acute paroxysmal attack or during an interval.

The patient should go to bed and stay there. A rubber hot-water bottle is to be placed on the abdomen whenever there is distention or pain, and at night an enema of six to ten ounces of olive oil at a temperature of 98° F. is given slowly from a douche-can with a long, soft-rubber nozzle (8 inches), preferably in the genupectoral position, or on the back with the hips raised.

A suppository of belladonna extract (gr. ½) or of morphine, if the pain is severe, should be inserted, and the patient directed to retain the oil until morning.

It will probably be necessary to continue the oil injection and belladonna suppository for several days, but as soon as the bowels act naturally they are given up.

The author then gives a typical dietary which contains the essentials of the treatment, but in which modifications, especially in quantities, must, of course, be made to suit individual patients.

7 A.M.: ½ pint milk-cream mixture.

8 A.M.: ½ pint Kissingen water.

9 A.M.: ½ pint cocoa with cream, 2 ounces; bread, 2 ounces; butter, marmalade.

10.30 A.M.: Massage.

11.30 A.M.: 12 ounces special soup; 3 ounces bread, 1 ounce butter; potatoes, green vegetables, baked apple, stewed pears, or boiled gooseberries; cream. Rest for two hours with hot bottle on abdomen.

4 P.M.: ½ pint milk-cream mixture.

7 P.M.: Dinner, like lunch, but with 3 ounces bread and 2 ounces of butter.

9.30 P.M.: ½ pint milk-cream mixture.

A description of certain items in this dietary may be found useful.

Milk-cream mixture: This consists of equal parts of milk and cream, and one teaspoonful of sugar of milk. The cream should contain 30 per cent of butter-fat, and nearly a pint should be taken in the twenty-four hours.

Kissingen water: This is used as a stomachic, not as an aperient.

Bread: This must be of the coarsest flour obtainable. The larger proportion of husk it contains the better. The usual brown bread sold as whole-meal bread is not sufficiently coarse.

Butter: The average total quantity should be ½ pound a day; 5 or 6 ounces of this is taken with bread, the remainder being used with the vegetables.

Special vegetable soup: This the writer considers to be the most important item of the diet, and should be prepared carefully according to the following directions:

Preparation of vegetable pulp: Place a breakfast-cupful of lentils or dry peas in a pan in sufficient cold water to cover them, and allow them to soak all night. In the morning add a slice of fat bacon about 6 inches by 2 inches and ¼ inch thick, and boil for one hour. Put one teaspoonful of butter and one of flour into a small pan on the fire, add a teacupful of milk gradually, stirring all the time until well mixed. Then add a teaspoonful of cream and mix with the pulp.

To vary the flavor of the soup, a sufficient quantity of green peas, spinach, asparagus, or other green vegetable should be placed in cold water and boiled for half an hour, rubbed through a sieve, and added to the soup.

The soup should contain all the husks of the peas or lentils, and should be more of the consistency of porridge than of soup.

Meat: This may be of any kind, but is more easily digested if prepared as follows: It is cut up finely with a sharp knife, and thoroughly pounded in a mortar while raw. It is then mixed with sufficient beaten-up white of egg and milk to make a thick cream, placed in a china cup, and boiled in a pan of water for three to five minutes, being well stirred during the process.

Vegetables: These should be of the coarse green varieties—cabbage, spinach, Brussels sprouts—well boiled and mashed with butter.

The massage is used mainly for two purposes:

1. During painful spasms of the colon, when very light massage of the abdomen, "effleurage," has a soothing effect, diminishing the pain.

2. Regular daily massage of the abdomen to improve the muscular tone of the bowel. To this may be added electrical treatment.

In addition, general massage is useful for promoting the general nutrition of the patient and for inducing sleep.

The result of this treatment is that after two or three days, during which there may be much painful flatulent distention of the bowels, a natural action of the bowels occurs—the feces being of a soft, buttery consistence, entirely different from the hard mass previously formed, and also different from the watery motions obtained by aperient medicines.

When a daily evacuation has been really established the patient may be allowed to get up for two hours daily and go for a walk or drive, but it is usually necessary to continue the treatment for at least six weeks. After this a gradual return may be made to more ordinary diet, but plenty of coarse bread, coarse vegetables, and fat should remain a constant constituent of the diet.

The author considers Von Noorden's treatment by diet to be the best, but if for any reason it cannot be properly carried out, there is no doubt that the Plombières

system of treatment is very useful. In cases in which the attacks of pain are very frequent and in which the patient would be unable to stand the first few days of the Von Noorden treatment, the Plombières "cure" may pave the way and enable the patient to undergo the more drastic treatment. It consists in the use of a particularly soft water for thorough lavage of the large bowel, for drinking purposes, and for external baths; the whole effect being soothing and palliative to the irritable, spasmodic bowel, as well as to the "nerves" of the patient.

A NOTE UPON BLACKWATER FEVER.

HARDY in the *Journal of the Royal Army Medical Corps* for August, 1908, gives his experience in the treatment of this affection.

Such was the unsatisfactory nature of the treatment in 1899 that Dr. H. Hearsey introduced a new line of treatment, which has proved so successful that the name blackwater fever has been robbed of many of its terrors; and this from the mental point of view, in a severe case, alone means a great deal in coping with it.

The treatment adopted is as follows: As soon as possible after the onset of the disease, calomel, with ¼ of a grain of morphine hypodermically to allay restlessness and vomiting, is given, the patient is wrapped in blankets, and hot-water bottles are put in the bed. An hourly dose of a mixture containing liq. hydrarg. perchlor. min. xxx, and sodæ bicarb. gr. x to a tablespoonful of water, is given for the first twenty-four hours, and every two hours subsequently, until the urine clears. No food is given for the first twenty-four hours unless there is an inclination for it on the patient's part and an absence of vomiting. The food which the author usually gives is: (1) Small quantities of milk and soda; (2) small quantities of freshly made chicken broth; (3) small quantities of white wine whey. Barley water is given *ad libitum*, and the patient encouraged to drink it. Acid drinks, such as lemonade, and champagne and hock, are absolutely prohibited. If alcohol is required toward the latter part of the illness, brandy or whisky is the only form in which to exhibit it. Beef extracts and essences are also strictly forbidden, and no quinine is administered. Digitalis is given if necessary.

The author has discussed the treatment with a German military surgeon in German East Africa, who tells him that quinine is forbidden in these cases, and that they rely upon copious libations of toast water, with excellent results. Unfortunately, he could not obtain any statistics.

The results of this method of treatment have been surprising. The mortality at once fell, and Dr. Hearsey was able to report a series of twenty-one cases without a death. Good results have been obtained by other practitioners. Suppression of urine, at one time a fairly common termination, has become an extremely rare one, and the severe vomiting, which was one of the most distressing features of an attack, is not now often met with.

ON CERTAIN ADJUNCTS TO THE OPEN-AIR TREATMENT OF TUBERCULOSIS.

RANSOME in the *Liverpool Medico-Chirurgical Journal* for July, 1908, reminds us that in all cases of active tubercular disease, rest is one of the first measures to be prescribed. It has been abundantly proved that such a course contributes, first, to the gain of weight, and to an improved quality of the blood; secondly, to the continuous warmth of the body; thirdly, the reclining position gives more complete repose to the bony levers overlying the injured lung; and fourthly, it has an important influence upon the state of fever, and generally upon the other symptoms of the acute stages of the disease.

But, on the other hand, the treatment of chronic maladies by overmuch rest has its dangers as well as its advantages. It is well known that from lack of sufficient exercise most of the functions may deteriorate; muscles waste and pass into a state of fatty degeneration; nerves lose their sensitiveness; and some of the forces upon which we most rely to strengthen the body

may fail us in our need, especially the appetite and power of digestion.

Hence we must seek for some means of meeting these dangers, and Dr. Weir Mitchell has provided us with them, in cases of neurasthenia, by the systematic use of massage and galvanism, and we may add to these the use of inunction of animal fats.

In many cases in which a prolonged stay in bed has been necessary, these measures have proved to be of the greatest service, and the writer therefore regards them as most useful adjuncts to open-air treatment.

Blisters.—This heading seems rather to recall the days of our grandfathers, and may perhaps excite some derision on that account. "Counter-irritation," as it was called, was truly greatly in vogue in former times, and that it was used in the treatment of phthisis is well shown by the old doggerel rhyme:

> If consumption cured can be,
> Which is a mighty rarity,
> These three things you must prepare:
> Milk, "traumatics," and fresh air.

It is possible, however, that we may sometimes miss a good thing by too much contempt for that which is old, and the author is convinced that one of these things is the "flying blister" applied over the site of active disease.

Although we do not know how they act, these applications certainly often do good, and we may even be allowed to surmise that they attract to the focus of disease an army of phagocytes, which may perhaps destroy both specific organisms and their allies. Whatever the explanation, the writer asserts he can testify that he has often seen a sudden amelioration of the symptoms follow their use.

Antimicrobic Treatment.—Pure air and sunshine are the best antiseptics, and it has been usual, in most sanatoria, to limit the use of chemical antiseptics to the destruction of the sputum, or occasionally to the fumigation of certain of the rooms. Yet they have their uses in the actual treatment of the disease, especially in the form of applications to the larynx in tubercular infiltration of that organ. Witness the success of insufflations of iodoform and of applications of guaiacol and menthol.

It is probable, moreover, that the excellent results of the administration of large doses of creosote, guaiacol, and their derivatives, which was so often carried out a few years ago, were due to the antiseptic power of these drugs of cleansing away all microbes from the intestinal canal.

Iodoform, again, probably for the same reason, has a distinct influence upon the gain of body weight in cases of phthisis, a fact which the author demonstrated in the *British Medical Journal* in January, 1883..

The action of yeast, administered hypodermically or by the mouth, is probably antimicrobic, and it has often been of great service, especially in mixed infections.

May we not also claim the administration of the new tuberculin (T. R.) as an antimicrobic means, seeing that it increases so much the resisting power of the organism, as shown by the opsonic index? None of these methods should be given up, though they should undoubtedly be used with discretion.

The Use of Drugs.—It is perhaps better to be skeptical as to drugs than to be too credulous as to their efficacy.

A NOTE ON THE TREATMENT OF HEMOPTYSIS BY AMYL NITRITE.

GRACE-CALVERT in the *Liverpool Medico-Chirurgical Journal* for July, 1908, says that the drug which seems to be most valuable in practically all cases of hemoptysis is nitrite of amyl. At first sight it seems to be the height of rashness to give a patient with a wounded and bleeding vessel a drug which acts powerfully as a dilator of vessels; but—even though its action be only transitory—it produces such an immediate fall in the general blood-pressure by dilatation of the vessels throughout the body that the pressure at the bleeding point is lowered and there is time for clotting to take place, and the bleeding usually ceases almost instantly. Even if the pulmonary vessels are dilated, the ill effects are more than counterbalanced by the fall in pressure; but Dr. Francis Hare, who first called

attention to the good results obtained by using nitrite of amyl in hemoptysis, quotes in an article in the first number of the *British Journal of Tuberculosis* experiments which seem to prove that it has a direct vasoconstrictor action on the vessels of the pulmonary periphery, in spite of a vasodilator action elsewhere. In a recent lecture on "Some Medical Hemorrhages" Dr. Leonard Williams stated that the only consequence of inhaling the nitrite is to induce a "wide-spread dilatation of the systemic vessels with a considerable and rapid fall of arterial pressure, but with no necessary or even probable consequential effect on the vessels in the pulmonary system;" and he therefore asserted that nitrite of amyl does no good in cases of hemoptysis due to rupture of a systemic vessel, and that as "the hemotypsis of phthisis may mean the rupture of a pulmonic or systemic vessel, the utility of the nitrite depends on which is affected."

Now, physiologically he is wrong, as Schäfer has shown that it is impossible to cause wide-spread dilatation of the systemic vessels without reducing the pressure in the pulmonary vascular system; and in the experiments that Francis Hare quotes it was found that, after the injection of one cubic centimeter of nitrite of amyl into the femoral vein of a curarized dog, the surface of the lung became bloodless and could be snipped with scissors without bleeding. Such an intense anemia of the lung could not be brought about by an action on the bronchial arteries alone.

Clinical records, too, are also against him, as in almost every one of over 170 published cases inhalations of nitrite of amyl have produced immediate cessation of the hemorrhage, and some at least of these cases must have been due to rupture of a pulmonic vessel.

Another good point in favor of nitrite of amyl is the fact that it does not interfere with coughing, and so does not prevent the patient from getting rid of the blood effused into the air-passages, and hence it materially lessens the risk of an extension of the disease or of septic trouble later.

The author has now treated about twenty-three attacks of hemoptysis with nitrite of amyl, and so far it has never failed him, even though some of the attacks have been very severe; and in practically all cases the bleeding has ceased at once, or else has been remarkably diminished directly after the inhalation of the drug.

DIAPHORESIS IN THE TREATMENT OF INTERNAL OCULAR AFFECTIONS.

In the course of an article upon this subject in the *Pennsylvania Medical Journal* for August, 1908, HANSELL states that the range of diseases in which treatment by active and continued diaphoresis is applicable is extensive. In his own experience he has found it to embrace inflammation of the sclerocornea, of the uveal coat, acute and chronic, of the chorioretina, and of the optic nerve. The treatment is not always successful, naturally, but he has never known it to be harmful. In some patients it has been tried as a last resort, and in all after the usual modes of treatment have been found useless. Its greatest value has been shown in chronic inflammation associated with exudation in large amount of the uveal coat, with secondary involvement of the tissues immediately adjacent. After the stage of atrophy and connective tissue change nothing may be hoped for. It is, however, not always wise to say positively from ophthalmoscopic findings that exudation has given place entirely to connective tissue, and only trial can determine whether treatment may be of avail. The etiology of the inflammations of the uveal coat seems to have little bearing on the result, provided a modification of the treatment is made in accordance with the underlying cause. Thus, in rheumatism the salicylates, and in syphilis mercury and iodide, are important adjuncts to the sweats, and in traumatic iridochoroiditis in non-syphilitic individuals the above and other remedies may be useful.

Diaphoresis may be induced and maintained without the use of jaborandi in any of its forms. The objection that jaborandi is dangerous, though its effects be carefully watched, so often heard, does not

apply in the sweating process as here described. The author has never seen any ill effect from the use of jaborandi, and would not hesitate to use it should occasion require, but in the past two or three years he has dispensed with it to his entire satisfaction. By means of the electric light, as suggested by Dr. Risley and as practiced in the Polyclinic Hospital, or by means of blankets and hot-water bottles, the sweating may be easily continued for one and a half or two hours. Formerly he inaugurated the sweating process by a hot bath of ten or twelve minutes in duration, the temperature of the water at 106° to 110°. In several instances the patients have been temporarily greatly weakened and have even lost consciousness for a few moments at the conclusion of the bath. In order to guard against this annoying complication, he has either preceded the bath by a hypodermic injection of strychnine or has dispensed with it altogether, thus eliminating one of the objectionable features of the treatment without detracting from its efficacy.

The method that he now practices is extremely simple. A rubber sheet covers the mattress on which the patient lies. He is enveloped in three thick blankets. On each side, extending from the feet to the shoulders and as close to the skin as the heat will permit, are placed receptacles filled with hot water. A cup of hot fluid, preferably tea, is drunk. The sweating should commence almost instantly, and by renewing the hot water may be continued for the desired time. A glass of ice water, one-half hour after the process has commenced, will serve to increase the sweating. A sense of discomfort and fulness in the head may be relieved by an ice-cap, which may be worn from the inception of the process. The duration of the sweating should not exceed one hour and a half; longer than this seems to enervate the patient and may detract from the value of the treatment. At its conclusion the body should be well dried and rubbed with alcohol. The discomfort, if any is felt, passes away and is succeeded by a feeling of rest and relaxation. The patient and the bed are supplied with dry clothing and remain inseparable for several hours. The most convenient hour for the bath is in the early afternoon, the patient remaining in bed until the next morning, when he may dress, and if the weather is propitious take exercise out-of-doors.

The method proposed by Dr. Risley also obviates the use of pilocarpine and the hot bath. Instead of hot-water bottles he induces a gradual increase of temperature by means of an electric bulb of 24 to 32 c. p., which is hung at the top wire of a cage enclosing the patient. Air is prevented from entering the cage by blankets or other covering, only the head of the patient being exposed. In hospital practice where there is frequent demand for the treatment the application is most useful. It is inexpensive and admirably adapted for the purpose.

PSYCHOTHERAPY: ITS SCOPE AND LIMITATIONS.

In the *Monthly Cyclopedia and Medical Bulletin* for July, 1908, MILLS in discussing this theme points out that in eras of excitement and exploitation of special methods of treatment the community at large or even the profession is often carried beyond the confines of reason. It would be easy to recall many illustrations of this fact. The great but unrealized, or only partially realized, expectations which were evoked by such discoveries as the tubercle bacillus, diphtheric bacillus, and the *x*-ray may be recalled. Even the advent of single remedies has sometimes awakened anticipation so extraordinary as scarcely to be believed in later times after such remedies have taken their real place, often a most important one. These remarks apply to such drugs as the bromides and the petroleum products, or going much farther back, to mercury, the iodides, quinine, and opium. The thousand and one remedies which have come loudly heralded and have departed, leaving no trace except the memory of a dishonored language and of unbenefited patients, need no reference in this connection. The writer is speaking rather of

remedies and measures of real and permanent value.

Who does not recall the high hopes of the suffering and the unthinking which were awakened by the propaganda in favor of the remedial use of electricity—in the early days by the static machine, the galvanic pile, and the faradic coil in their then crude and clumsy forms, and in more recent times by the improved Franklinic machine with its accessory appliances, by the sinusoidal current or the currents of high tension or great frequency, by the electric vibrator, and all the rest? Who does not recall the joyful anticipations indulged in by the very sanguine, or the more or less feeble-minded, when suspension was announced as a cure for sclerosis, and the correction of eye-strain as the sovereign remedy for epilepsy, and everything else of a neurological character which could not be reached by any other therapeutic method? Indeed, some of our ophthalmological enthusiasts have gone so far as to find in the correction of the errors of refraction the panacea for the ills of every refractory organ, whether in the brain, the thorax, the abdomen, or the pelvis. In the medical world remedies and therapeutic measures become the rage, just as in other worlds horse shows and bridge, bicycles or automobiles, football or stock gambling, may become the rage. The rage subsiding, a sane residuum is left, whether in medicine or in the lay world outside of it.

Coming nearer to our subject, the eras of excitement regarding mesmerism, animal magnetism or hypnotism, which at intervals would seem almost to recur like panics, under some occult law in periods of ten or twenty years, will be suggested. They have come and gone, doing little good and much harm, and leaving behind them a trail in which harm and good commingle, the former predominating. When the author speaks of harm and good he is limiting his meaning to the matter which concerns us most in this paper, namely, that of the cure or relief of disease. Scientific results, which cannot be measured in the same balance with therapeutic achievements, have come from a study of hypnotic phenomena. Some years of experimentation and many years of observation have led the writer to the belief that hypnotism as a therapeutic procedure, while of some value, has its decided limitations. Psychotherapeutics, of which the practice of hypnotism for remedial purposes may be regarded as a phase, has also its decided limitations. The thoughtful physician will recognize and act upon these limitations.

On arising from the reading of some of the chapters in the book of Du Bois, one cannot help feeling either that this writer is occasionally oversanguine or mistaken in the permanence of some of his results, or else that he has powers of healing by reasoning and persuasion far exceeding those possessed by other mortals. While the author states that he would not for a moment question the verity of his reports, it has seemed to him with regard to some of them that, like the reports of cures from operations or from new medicinal remedies, sufficient time has not been allowed before recording to decide on the real merits of the treatment. It is true that he tells us of the relapses of his patients and of his occasional failures, but discounting these his results still remain apparently so brilliant that it is hard to reconcile them with our experience, even making all allowance for the superior powers of the recorded. Take, for instance, his reports of his successes by his methods of persuasion in the treatment of insomnia and of some of the obstinate forms of tic. In these disorders, while such measures are useful as adjuvants and in rare cases efficient for radical cures, they will, the author believes, fail even when exercised by those who frequently from their personality or training are most capable of using them successfully.

BARIUM, A CAUSE OF THE LOCO-WEED DISEASE.

As the result of an original research on this subject, published in Bulletin 129 of the U. S. Department of Agriculture, CRAWFORD contends that:

1. Conditions analogous to those met

with in locoed animals occur in other portions of the world, especially in Australia.

2. The main symptoms described in stock on the range can be reproduced in rabbits by feeding extracts of certain loco plants. Those especially referred to here under the term "loco plants" are *Astragalus molissimus* and *Aragallus lamberti.*

3. The production of chronic symptoms in rabbits is a crucial test of the pharmacological activity of these plants.

4. The inorganic constitutents, especially barium, are responsible for this action, at least in the plants collected at Hugo, Colo. Perhaps in other portions of the country other poisonous principles may be found.

5. A close analogy exists between the clinical symptoms and pathological findings in barium poisoning and those resulting from feeding extracts of certain loco plants. Small doses of barium salts may be administered to rabbits without apparent effect, but suddenly acute symptoms set in analogous to what is reported on the range.

6. The administration of sulphates, especially Epsom salts, to form insoluble barium sulphate, would be the chemical antidote which would logically be inferred from the laboratory work, but of necessity this would have to be frequently administered, and its value after histological changes in the organs have occurred remains to be settled. But even the treatment of acute cases of barium poisoning in man is not always successful, even when sulphates combined with symptomatic treatment are employed. The conditions under which the sulphates fail to precipitate barium must be considered. At present it seems best to rely on preventive measures rather than on antidotal treatment.

7. Loco plants grown on certain soils are inactive pharmacologically and contain no barium. In drying certain loco plants the barium apparently is rendered insoluble so that it is not extracted by water, but can usually be extracted by digestion with the digestive ferments.

8. The barium to be harmful must be in such a form as to be dissolved out by digestion.

9. In deciding whether plants are poisonous it is desirable not merely to test the aqueous or alcoholic extract, but also the extracts obtained by digesting these plants with the ferments which occur in the gastrointestinal tract.

10. It is important that the ash of plants, especially those grown on uncultivated soil, as on our unirrigated plains, be examined for various metals, using methods similar to those by which rocks are now analyzed in the laboratory of the United States Geological Survey.

11. It is desirable to study various obscure chronic conditions, such as lathyrism, with a view to determine the inorganic constituents of lathyrus and other families of plants.

THE PREVENTION OF TROPICAL ABSCESS OF THE LIVER BY THE TREATMENT OF THE PRESUPPURATIVE STAGE OF AMEBIC HEPATITIS.

ROGERS asserts in *Archives of Internal Medicine* for June, 1908, that the value of ipecac is very great. In giving large doses of ipecac in amebic dysentery and hepatitis, precautions have to be taken to avoid vomiting, especially if it is possible that an abscess of the liver has already formed. The usual method is to give either tincture of opium or chloral hydrate some twenty minutes before the freshly made pills, or bolus, of ipecac, no food or drink being given for several hours before and after the dose, which is best administered once a day in the evening. Recently the author has had the drug put up in quantities of five grains in keratinized capsules, which are not dissolved until they reach the small intestines. This has worked very well, no antecedent sedative being required. Dr. F. B. Grubbs, of the United States Army, has recently informed the writer that the same desirable effect is obtained by coating ipecac pills with melted salol, but has not yet had an opportunity of trying it. From 30- to 60-grain doses of the drug have been used, but the smaller quantity appears to be efficient. It should be continued for at least two weeks at increasing intervals, as two of his earlier cases, in which the ipecac

was discontinued as soon as the temperature fell, relapsed some months later, presumably owing to the latent amebic ulcers not having been completely cured.

There remains to be considered a very important question: What is the usual duration of the presuppurative stage of amebic hepatitis, during which the ipecac treatment will avert the formation of an abscess of the liver? An examination of the author's records of the last seven years has furnished the following data on this point: Out of 53 native patients admitted to the hospital with liver abscess, often bulging through the thoracic or abdominal wall, 50 per cent gave a history of over two months' illness, and 38 per cent more between one and two months; 9 per cent from two weeks to a month, and only one case, or 2 per cent, had been suffering for less than two weeks. Among 26 cases in Europeans there had been fever of hepatitis for over one month in 50 per cent, for from two weeks to a month in 34.6 per cent, and of less than two weeks in only 15.4 per cent, the times being 9, 9, 11, and 13 days, respectively, in these four cases. It is clear from these figures that in the vast majority of instances there is ample time for the diagnosis by blood examinations, etc., and for the ipecac treatment being carried out during the presuppurative stage of acute amebic hepatitis. Very rarely multiple abscesses may develop within a few days with extreme acuteness, but even here the only chance of saving the patient is in the immediate ipecac treatment.

The author's experience of this treatment leads him to believe that it is not too much to say that over 90 per cent of amebic abscesses of the liver can and ought to be prevented by the methods described in this and in previous communications, and thus one of the greatest scourges of some tropical countries may be conquered by the prompt use of a simple medicinal treatment, based on the correct conception of the true pathology of the disease derived from prolonged combined microscopic and clinical observation.

THE ABUSE OF ALCOHOL IN THE TREATMENT OF CHILDREN'S DISEASES.

TOWNSEND says in the *Boston Medical and Surgical Journal* of July 30, 1908, that among the most frequently used remedies in the diseases of children, alcohol probably ranks first. With its long reputation as a stimulant, it is natural that alcohol should be given both in the acute and in the chronic diseases of children. If the physician does not order it, the parents are apt to suggest its advisability in all exhausting illnesses. The very name pneumonia, for example, suggests to most parents and physicians the use of alcohol to stimulate the infant or child, so as to carry it through the exhausting attack of this dreaded disease. The same may be said of diphtheria, although, fortunately, antitoxin has largely robbed alcohol of its rôle in that affection. In the prolonged summer diarrheas, many of which take on a decided septic character, alcohol is the sheet-anchor of many practitioners, and the drug is given in large amounts.

If, however, we are to believe the conclusion drawn by some recent students of the question, that alcohol acts as a narcotic and depressant in small as well as in large doses, a halt should be called to the indiscriminate use of this drug. However this may be, and it is not the intention of the author to discuss the question here, it would be well for a moment to consider the differences in the effect of alcohol in children and in adults. Most adults have a firm belief in the stimulating action of alcohol, and are probably benefited by their faith in its use in exhausting illness. This belief is, of course, absent in infants and young children. Again, children live in the present. If they are comfortable they do not fret about past sufferings, nor anticipate trouble to come. Adults, on the contrary, no matter how comfortable they may be in the present moment, often worry about past or future sufferings, about domestic affairs and financial matters. Alcohol in acting on the higher centers, whether the action be a depressing one or not, appears, at least, to act as a stimulant by making the

patient forget his worries, for the time being. Whether the general and lasting effect be a good one or not need not be discussed here, but the point the writer wishes to make is that these partially psychotherapeutic actions of alcohol, which may have an immediately good effect in adults, are largely absent in infants and children. Another difference between children and adults as regards alcohol is that to many adults alcoholic drinks are pleasing to the palate, while they are generally distasteful to children. Furthermore, in some adults the use of alcohol has become habitual—a drug habit—and this may require its continuance during disease. It is, of course, rare that this latter state of affairs exists in childhood.

In the gastrointestinal disturbances of summer, due primarily to infected food supply, the use of alcohol in the form of brandy or whisky and of proprietary food extracts, containing often a large amount of alcohol, is common. The most important factors that make toward the recovery of the infant in these diarrheal diseases are, first, a cleansed and unirritated gastrointestinal tract, and secondly, a bland and unirritating food that can be assimilated. Any food or drug which interferes with these two factors is distinctly a handicap. Food digested and absorbed is the best stimulant such an infant can have. The use of alcohol sometimes makes the difference between a quiet and an irritated regurgitant stomach.

Acute lobar pneumonia is the type *par excellence* of a self-limited disease. It runs an almost universally favorable course in children and in infants who are not weakened by other diseases, or handicapped by injudicious drugging, or overwhelmed by overheated and foul air, and by heavy poultices or pastes. Yet how often, with the best intentions in the world, do we see infants suffering from this disease given alcohol, often in large amounts. The writer is convinced that these cases do far better with no alcohol at all, and his observations in a large number of cases of this disease would bear out the theory that the action of alcohol in any considerable amount is a depressing one. Whether small doses are harmless or not it is difficult to discover.

AN ANALYSIS OF FOUR HUNDRED CASES OF EPIDEMIC MENINGITIS TREATED WITH ANTIMENINGITIS SERUM.

This analysis, which has a most important bearing upon the treatment of this virulent disease, is published in the *Journal of Experimental Medicine* of September 5, 1908, by FLEXNER and JOBLING. Their conclusions are as follows: The analyses of histories of cases of epidemic meningitis which have been presented in this article furnish convincing proof that the antimeningitis serum when used by the subdural method of injection, in suitable doses and at proper intervals, is capable of reducing the period of illness; of preventing, in large measure, the chronic lesions and types of the infection; of bringing about complete restoration to health in all but a very small number of the recovered, thus lessening the serious, deforming, and permanent consequences of meningitis; and of greatly diminishing the fatalities due to the disease.

FURTHER STUDIES UPON ANAPHYLAXIS.

This important subject dealing with the untoward effects of diphtheria antitoxin which are sometimes developed in hypersensitive individuals is reported upon by ROSENAU and ANDERSON in the *Bulletin of the Hygienic Laboratory* for June, 1908, No. 45. Their experiments demonstrate that the horse serum used in cases followed by sudden death is no more toxic for guinea-pigs than antitoxic horse serums used extensively in human therapy without untoward symptoms.

It is their belief that it is not the special toxicity of the horse serum, but the sensitization of the patient, which accounts for the collapse or sudden death sometimes following the injection of horse serum.

They are still unable to account for the ways in which man may be sensitized to a

foreign protein. It seems perfectly plain, however, that man may be so sensitized.

In previous publications they suggested that the essential lesion of serum anaphylaxis is probably localized in the respiratory center, and the association of asthma and hypersusceptibility to horse serum in man seems to lend some weight to this hypothesis.

The knowledge of the fact that an injection of horse serum into some asthmatics may be attended with danger should be considered in the use of antitoxin.

The repeated injections of small amounts of horse serum sensitize guinea-pigs.

Repeated injections of large amounts render guinea-pigs partially immune.

Repeated injections of small amounts of serum into sensitized guinea-pigs have no appreciable effect.

Sensitized guinea-pigs cannot be immunized by repeated injections of heated serum (100° C. for one hour).

The author suggests a possible relation between the toxemias of pregnancy and anaphylaxis.

Guinea-pigs cannot be sensitized with guinea-pig fetal blood. This shows that the fetal blood of the guinea-pig does not contain an alien protein for the mother.

Guinea-pigs may be sensitized and subsequently poisoned with guinea-pig placental extracts.

COCILLANA.

EARP in the *Central States Medical Monitor* for August, 1908, states that after the use of cocillana, in certain respiratory diseases, he has found expectoration was more easily accomplished. The cough was generally less violent, and he found codeine and heroin valuable adjuvants. In tuberculosis the amelioration of the cough was more pronounced when the fluid extract was used than when codeine or heroin was used independently. The lingering cough which frequently follows some of the acute infectious diseases is very often benefited by the use of cocillana.

In two cases of tuberculosis in which considerable dyspnea and expectoration took place with great effort, he found a betterment of the condition so far as relief was concerned, but did not observe any influence on the profuse perspiration at night. The laxative effect was noticeable, and in one case the patient was so enthusiastic over the relief he obtained that he increased the size of the doses and took them more frequently; as a result there was violent purging and vomiting, followed by profound prostration, which necessitated the prompt use of stimulants. After this condition, which might be called a toxic effect, the physiological action was more noticeable even when small doses were taken.

In one case of asthma the patient obtained some benefit. In two cases of chronic bronchitis the author used the fluid extract of cocillana in doses of 10 to 30 minims without the addition of any other remedy. In one the cough soon became less violent, the expectoration easy, and no untoward symptoms; in the other, a lady of seventy years, the expectoration seemed to be profuse yet thin for at least two weeks, but after this it became scanty, the appetite improved, and there was general betterment in the nutrition. This case had suffered from indigestion, and there was more relief than had been obtained by other remedies; this probably accounts for the improvement in nutrition.

In combination with heroin the author used this agent in two cases of whooping-cough and was impressed with the therapeutic result. He feels, therefore, that it should have a more extended trial.

FAVUS.

LOW in the *Edinburgh Medical Journal* for August, 1908, reports upon his methods of treating favus.

The cases he reports varied greatly in severity, 34 affecting all the scalp, 10 the greater part of the scalp, 4 being limited to the vertex, 2 having only small areas affected, and 3 cases being of doubtful distribution.

The treatment carried out in the favus cases was exactly the same as in the tineas,

with the modification that instead of the sulphur and ammoniated mercury ointment used for the ringworms a 10-per-cent oleate of copper or resorcin ointment was used. As a great many of the favus children had no one at home to look after them they came daily, or rather were supposed to come up daily, to have their heads washed and rubbed with ointment.

All the 53 cases except 13 were also treated by *x*-rays. The 13 cases which were not rayed were all only seen once, and either came from the country for advice, and returned under the care of their own doctor, or were town cases which did not return for *x*-rays. Of the cases *x*-rayed, all the scalp was exposed in each case. On an average each scalp was *x*-rayed all over (*i.e.*, 12 exposures to different areas) 2½ times. One case had the whole scalp rayed no fewer than eight times in two years, and another case, six times in a year and a half. When one considers that the former case received in all 96 exposures in two years, and that a certain amount of the rays penetrate the skull, one wonders what effect these rays have on the subjacent brain. But no effects have so far been observed in the mental condition of these children.

The results of treatment show in the 45 cases in which one can judge 18 per cent of cures; 36 per cent of the cases improved; and 46 per cent of the cases remained *in statu quo*. The cured cases took a little over an average of eleven months to complete the cure, the shortest time being three months and the longest thirty-five months. The cases marked "improved" were treated on an average for 7½ months. The cases marked *in statu quo* were under treatment on an average of 10.2 months, so that about one-half of the cases were under treatment for over ten months each with absolutely no improvement. This result is not encouraging, but is entirely due to the want of systematic application of the treatment by the patients or those responsible for the carrying out of the treatment. This is well exemplified by two cases under the author's care, both of which were treated in the wards of the skin department of the Royal Infirmary, Edinburgh, till cured. One of the cases, which had suffered from the disease for twenty years, was cured in three months, and the author has no doubt that equally good results could be got in the great majority of cases, if one could have the cases continuously under observation and control till a complete cure was effected. These patients are *x*-rayed. The hair falls out after the *x*-rays, and with the washing and application of ointment the scalp gets fairly clean; then the patient disappears before the cure is complete, only to reappear again a month or so later with the disease just as bad as ever.

THE TREATMENT OF CHOLERA BY SALINE INJECTIONS.

GUPTA in the *Calcutta Medical Journal* for August, 1908, states that the effect of intravenous injection is to cause pulse to return to the wrist, and it becomes stronger; the patient becomes quiet; the cramps disappear; the body becomes warm; any pain in the abdomen, if present, disappears; cyanosis becomes less; the voice becomes normal. The patient says he feels better, and may even go to sleep during the injection. Perspiration, if present, stops. In some cases in which the patient was not perspiring before, he may get a profuse perspiration during the injection. In many cases rigor occurs during the injection or soon after it; but it does not seem to do any harm, though the temperature may temporarily rise two or three degrees above the normal.

Sometimes headache is complained of, probably due to too quick entrance of the saline.

The effect of the injection is so striking and sure that whoever has seen it has become convinced of its good results.

As regards its permanency, generally one injection is sufficient. In a few cases two, and in rare instances three, injections may be required, and it is almost certain that the patient is sure to survive the collapse stage.

Intravenous injection seems to do good in three ways:

1. All the troubles of the collapse stage

or of the stage of full development completely cease or are greatly ameliorated.

2. Toxins are diluted.

3. In many cases, by preventing the congestion of the kidneys, it prevents the degeneration of kidney epithelium and thereby minimizes the risk of uremia later on.

The author is inclined to believe that the cases in which uremia sets in generally have a prolonged stage of collapse, during which the kidneys have become degenerated, but regrets he has not full notes to substantiate this view.

Probably there are two causes acting harmfully on the kidneys:

(a) Owing to the thickened condition of the blood and diminished force of the heart, blood cannot pass as quickly through the kidneys as normally, and thus the proper nutrition of the kidney cells is interfered with.

(b) The toxins absorbed from the intestines probably have some direct deleterious action on the kidneys. However that may be, the albumin was found in all cases in which the first urine passed after the reaction was examined. Albumose was not found in any case in which it was tested for. Indican was present in a few cases.

The use of saline of 1.25-per-cent strength has a beneficial effect on the purging as well, which either ceases or becomes very much less. All patients lost after adopting saline of this strength were from uremia. In those in which uremia sets in the pulse remains good almost to the end; he may not pass any urine, or if it is passed at all, it is very little in quantity (2 to 8 ounces in twenty-four hours). Later on even this little urine also ceases, the patient again becomes restless, and gradually drowsiness comes on, which passes to unconsciousness; the breathing becomes hurried, sighing or hissing in character, oftentimes groaning; the body remains warm. There is occasionally twitching of the tendons of the forearm and low delirium. Death occurs after suffering from these uremic symptoms in from two to three or more days. Gupta says it is apparent that we have an almost sure method of combating the full development and collapse stage of this disease.

But in the reaction stage the great trouble is the complete anuria or very little amount of urine in twenty-four hours. Under the injection method of treatment most of the patients (about 63 per cent) recover completely, though the convalescence is a little more prolonged than if the patient had recovered with rectal injections alone.

THE TREATMENT OF TAPEWORM.

In the *Clinical Journal* of August 5, 1908, HALL gives the following directions for the treatment of tapeworm. To a patient he gave first, after using a very light diet for two days:

℞ Sodii bicarb., gr. xx;
Sodii sulphatis, ʒj;
Spiritus chloroformi, min. xx;
Aq. menthæ piperitæ, q. s. ad fʒj.
Take three times a day.

As a result of this treatment his bowels were freely moved. On the evening of the third day the patient had the following draught:

℞ Magnesii sulphatis, ʒss;
Tinct. jalapæ, fʒj;
Tinct. chloroformi co., min. xx;
Aq., q. s. ad fʒjss.

Early the following morning male-fern was given in a mixture:

℞ Extracti filicis fluidi, fʒj;
Pulv. tragacanth. co., gr. xx;
Spiritus chloroformi, min. x;
Aq. menthæ piperitæ, q. s. ad fʒj.

An hour later the dose was repeated, and an hour after the second dose the patient was given half an ounce of castor oil with a drachm of the tincture of jalap. As the bowels did not act very promptly an enema was administered, and this brought away many feet of tapeworm, and the head of a *Tænia Mediocanellata* was found among the segments.

The brief notes of the case the author has given will illustrate the points on which he wishes to lay stress. In the first place, he would direct attention to the failure of the previous treatment of the patient. Fifteen attempts had been made to relieve

the patient of his troublesome guest, but though many segments were expelled, the head remained attached to the bowel, and after the usual period of three months segments were again passed. In the second place, he would remark that the directions for treatment given in the text-books in common use are not sufficiently precise. The practitioner, who has probably not seen a case of tapeworm treated during his hospital career, will naturally be compelled to have recourse to his text-book to see what line of treatment should be employed when he is called upon to prescribe for a patient suffering from this complaint. If he refers to more than one text-book he will find great divergency both as regards the dose of male-fern to be employed and the steps to prepare the patient before the administration. The author has looked up the four text-books which he believes are mostly in vogue at the present time. The dose of the liquid extract of male-fern in one book is given as 15 to 30 minims, in two as a drachm to a drachm and a half, and in the fourth the dose is stated to be two drachms. Then as to the method of preparing the patient, one authority says that "in most cases it is sufficient for the patient to have no food after six or seven in the evening, and to take the anthelmintic before breakfast the next morning." Another only says that "it is advisable for the patient to fast several hours before taking it" (*i.e.*, the anthelmintic). A third advises that the patient should "take only liquids, such as milk and beef tea, for a day," and the fourth advises that for two days prior to the administration of the remedies "the patient should take a very light diet." Only one of the four writers mentions anything as to the necessity of medicinal treatment before the administration of the anthelmintic, and he says that the patient should "have the bowels moved occasionally by a saline cathartic."

Following these totally inadequate directions, it is no wonder that medical practitioners fail to treat cases of tapeworm successfully, and if at times the head is expelled it is more by luck than good management that it happens. In order to insure success in the treatment of these cases several points must be borne in mind. In the first place the intestine must be as empty as possible. In the second place the catarrhal condition of the intestines, which so often exists in cases of tapeworm, must be remedied, as, if the worm be protected by the intestinal mucus, the anthelmintic may not be successful. Thirdly, the advisability of giving the liquid extract of male-fern in two doses; it had been suggested that the first dose causes the worm to relax the very firm hold it has upon the intestine, and the second dose kills it outright. And lastly, the administration of a brisk cathartic to bring away the worm and the male-fern, so as to prevent any toxic effects on the patient from the latter.

All these indications are met by the following plan of treatment, which the author has found to answer in every case in which he has employed it. It may seem rather strict, but in the long run it will save much time and trouble.

For three days previous to the administration of the male-fern the patient should be kept entirely on a liquid diet. He has found that a pint and a half of milk and a like quantity of beef tea answer very well. To promote a free action of the bowels and to favor the removal of mucus a mixture containing twenty grains of bicarbonate of sodium, a drachm of the sulphate of sodium, and twenty minims of spirit of chloroform in an ounce of peppermint water should be taken three times a day.

The night before the male-fern is given the patient should have a draught containing half an ounce of sulphate of magnesium with a drachm of tincture of jalap, and twenty minims of the compound mixture of chloroform in an ounce of water. This should be repeated next morning at 7 o'clock if the previous dose has not operated. At 8 A.M. a drachm of the liquid extract of male-fern made up in a mixture with a drachm of mucilage of tragacanth and a drachm of the syrup of ginger in an ounce of chloroform water; at 9 A.M. this dose should be repeated. At 11 A.M. half an ounce of castor oil with a drachm of tincture of jalap should be given,

and if the bowels do not act within an hour an enema of a pint and a half or two pints of soapy water should be administered. The motions should be carefully examined to find the head, and if the above treatment has been faithfully carried out it may be sought for with confidence. It is desirable to keep the patient in bed for two or three hours after the bowels have acted, as the male-fern may cause faintness. The line of treatment the author has depicted above was originally described by the late Dr. Leslie Ogilvie, and it is to prevent an excellent method from falling into oblivion that he has been induced to pen this communication.

THE TREATMENT OF TRACHOMA.

In the *Long Island Medical Journal* for August, 1908, HANCOCK states that the more he sees of trachoma and the more he treats it the more firmly convinced is he that any case presenting objective symptoms sufficient to permit of a diagnosis being made is a case for operation.

It has been his fortune to have seen or performed most of the operations for the cure of trachoma suggested in recent years, and he has used almost, if not quite, all of the numerous instruments in the line of scarifiers and forceps that have been presented, and has reached what is to him a satisfactory and probably final conclusion concerning their relative merits, which is as follows, viz.: That the only way to cure trachoma is to rupture the granules and express their contents and to follow these procedures for a number of weeks with instillations of a mildly stimulating antiseptic, the last to eliminate traces of infection in a germicidal way and by absorption small and deep granules not affected in the operation. No case should be left without giving careful instruction concerning this after-treatment.

Concerning the instruments, his estimate causes him to state after thorough trial that to his mind the best instrument ever presented for the purpose of rupturing the follicles is the Jameson trachomatome. This instrument does its work thoroughly without injury to the conjunctiva.

Hancock thinks that after the granules have been ruptured every lid so operated upon should be subjected to a thorough "squeezing." An instrument should be used which will expel the contents of the granules and not engage the conjunctiva.

THE IMMEDIATE TREATMENT DEMANDED IN CERTAIN OF THE MORE SERIOUS OCULAR CONDITIONS.

CHENEY in the *Boston Medical and Surgical Journal* of August 13, 1908, gives the following advice. One class of cases that the author wishes to refer to briefly is the perforating wounds of the eyeball. A perforating wound—that is, a wound made by some foreign substance passing through the cornea or sclera—must always be regarded as a serious condition whatever the nature of the object causing the injury. Not infrequently the immediate result is a blind and deformed eye, and enucleation is the only question to be considered. More often, however, an effort must be made to save an eye that will be of some value as an organ of vision, or if this is impossible, one that is at least to be preferred to an artificial eye, and that will not endanger its fellow. The large majority of these patients are working people, mechanics, stone-cutters, and the like, and while a certain number immediately enter a charitable institution and come under the care of an oculist, many others, for the reason that they live at a distance, or for some other cause, are first seen by a man in general practice. It is to be expected that a perforating wound will be followed by inflammation, although it is by no means an inevitable result. At times a general suppuration of the greatest intensity will make its appearance soon after the injury, and treatment seems absolutely of no value in allaying its progress or in preventing a destruction of the globe. In the general run of cases, however, such an unfortunate termination is not to be looked for, and if appropriate treatment can be received early, that is within four or five hours of the injury, the outlook is certainly much better than when treatment is delayed for forty-eight or even twenty-four hours.

It will, of course, be understood that the following suggestions are in the nature of early emergency treatment, and that various modifications and changes may be demanded if a case is under one's care for any length of time.

First, to lessen the chances of infection, or at least further infection, the lids and their immediate neighborhood should be thoroughly cleaned and the conjunctival sac irrigated with a boric acid or some other mild solution. It is impossible to make the conjunctival sac absolutely sterile, but if the patient is placed on the back, the lids separated and the eye washed out with three or four dropperfuls of a boric acid solution, it will at least be clean.

Second, a one-per-cent solution of atropine should be instilled three or four times at five-minute intervals, for the reason that iritis will develop in at least 80 per cent of these perforating injuries. If atropine is not used, and numerous iritic adhesions take place, as they frequently will within the first twenty-four hours, they may very seriously interfere with the future successful treatment of the eye. If the anterior chamber is evacuated, the pupil will not dilate until it is reëstablished. It is, nevertheless, advisable to use atropine so that its effects may be obtained as early as possible after the chamber begins to refill.

Third, some simple non-irritating ointment, a piece the size of a pea, should be placed on the inner surface of the lower lid and the eye then bandaged (except in certain injuries that the author refers to presently). A valuable ointment for this purpose is the so-called White's ointment, compounded as follows:

℞ Hydrarg. bichloridi, gr. 1/12;
Sodii chloridi, gr. ½;
Petrolati, ʒiv.

Fourth, a good dose of Epsom salts, calomel, or some other active cathartic should be given; and

Fifth, a leech to the temple is a good routine practice and at times is of the greatest value.

When the eye is bandaged, if the pupil is well dilated, it is usually unnecessary to change the dressing oftener than twice a day, the eye being thoroughly washed out, atropine instilled, and the ointment applied at each dressing.

In injuries from dynamite, powder explosions, firecrackers, etc., where the conjunctiva and the lids are usually more or less burned and lacerated, exceptions are to be made in this treatment, especially as regards bandaging. These cases are very liable to develop a mucopurulent conjunctivitis, and many eyes are lost by a secondary infection of the cornea. Closing up the eye by bandaging under such circumstances would certainly add to the danger of infection. From the experience of the author he believes the best results are to be obtained by washing out the conjunctival sac every fifteen or twenty minutes with a boric acid solution, applying boric acid ointment to the surface of the lids, and in using cold compresses for the first two or three days, not omitting, of course, the instillation of atropine as often as the condition of the pupil may demand.

A delay in transferring these patients to the care of an oculist is, of course, often unavoidable, but a special effort should be made in cases complicated by a prolapse of the iris requiring abscission, and also where the perforating object is a bit of steel lodged in the interior of the eye and whose removal necessitates the use of a magnet.

POSTOPERATIVE HEMORRHAGE FROM THE STOMACH AND INTESTINE.

THELEMANN (*Deutsche Zeitschrift für Chirurgie*, Bd. xciii, Heft 1) states that only a few reports of hemorrhage from the stomach and intestine following operation have been made, and that he has not been able to find a detailed report of postoperative intestinal hemorrhage. He reports two cases occurring in his practice, both of which recovered. In the first the bleeding followed operation for appendiceal abscess, and in the second operation for rupture of the intestine caused by the kick of a horse.

In most cases no special treatment is necessary, but if the patient's life is threatened food should be withheld, and the intestine

washed out with soda solution; subcutaneous injection of salt solution and clysters containing ergot should be given. Ice-water clysters as recommended by Kehr cannot be given in the presence of collapse, nor can operation be carried out. In these cases chief dependence must be placed upon saline infusion, which should be persevered in until the bleeding has ceased. It is also advisable to give styptics internally.

THE "LIGHTNING" TREATMENT OF CANCER.

ROSENKRANZ (*Berliner klinische Wochenschrift,* Jahrg. 45, Nr. 20) reviews the work of Keating-Hart in the treatment of cancer by a method which he first reported at the Milan Congress for Electrology in September, 1906. The method consists in the application of the spark of the exaggerated high-frequency alternating current, or so-called Tesla current.

By applying this spark to a tumor, the latter is rendered anemic and is softened so that it can easily be removed with the curette. It also gives quick and lasting relief to pain. In ulcerated tumors in the skin or mucosa, or in tumors under the skin after having been laid free with the knife, the electrode is carried quickly from place to place over the surface. The length of the spark is varied from two to six centimeters. In cancer of the vagina or rectum application is made after exposing the part with a speculum. After the tumor tissue is softened it is removed with curette, scissors, or knife. Then after controlling the hemorrhage the spark is again applied to the wound surface from a few minutes to half an hour or longer. After removal of deeply-lying growth the incision may be sutured at once, but in some cases, as seems necessary, drainage may be used. Anesthesia is necessary because the application of the spark is very painful. Neither the operation table nor the anesthesia mask dare be of metal, for burning of the patient may result from sparks which leap over their limits.

Three varieties of tumor have been treated: Cancer of the skin; cancer under the skin, nofably those of the breast; and cancer of the tongue, mouth, rectum, and uterus. In many of the skin cancers other treatment, as by radium, *x*-rays, or surgical operation, had already been employed, so that the exact credit due the electric treatment cannot be accurately estimated; but after its use was begun the disease quickly disappeared, and with a cosmetic result that was often astonishing. Of the 70 cases thus treated almost all showed good results.

As to the second category of cases, with the exception of two, in which there was metastasis to the spinal column and the liver, noteworthy results were produced. The results in the third class of cases were also very satisfactory.

THE THERAPEUTIC APPLICATION OF SUNLIGHT IN SURGERY.

HAEBERLIN (*Wiener klinische Rundschau,* Jahrg. xxii, Nr. 22) says that the first influence of sunlight is upon the skin, in which it causes a diffuse reddening and later a deposit of pigment in the deeper layers. Excessive sunlight produces erythema, inflammation, and blistering of the skin. This is due to the blue and violet, also the invisible ultraviolet, rays and not to the heat rays, for the same thing occurs in the frigid zone. The body shows after a sun-bath an increase of temperature, oxidation, and hemoglobin. It is possible that the energy of sunlight penetrates to the deeper tissues and influences the internal organs.

The retarding and bactericidal influence of sunlight has been fully demonstrated. In a therapeutic way sunlight has been used in the form of sun-baths for the whole body. In this it has given good results when used with care. For local affections it has been used by Finsen in the treatment of lupus, the rays being concentrated by rock crystal and the heat rays being removed by passing through water. The unfavorable weather in Copenhagen was the chief cause of his later turning to the arc light as a source of light.

Up to the present the best results have been reported from Switzerland, for in the dry, rarefied air of the Swiss mountains there is not much absorption of the power-

ful ultraviolet rays as they pass through the atmosphere. Here good results have been obtained in the treatment of all forms of surgical tuberculosis, ulcers, suppuration, and neoplasm. Even in the lowlands of Europe excellent results have been obtained. The author has observed very rapid epithelializing of wounds under the influence of the sun's rays. He has never seen the exuberant granulations and slow healing which often accompany treatment by ointments and bandages. Good results were observed in incised wounds, burns, drainage tracts, and leg ulcers.

The practical use of the sun's rays is extremely simple. The part to be treated should be exposed by an open window for a time varying up to several hours daily, depending upon the intensity of the light. Sunlight which has passed through the window pane is not useful because the ultraviolet rays have been filtered out. Between the exposures the wound should be lightly covered with gauze.

RECURRENCE OF GALL-STONES AROUND A SUTURE INSERTED AT PREVIOUS OPERATION.

FLÖRCKEN (*Deutsche Zeitschrift für Chirurgie,* Bd. xciii, Heft 3) reports one case of his own from Enderlen's clinic, one of Enderlen's, and six by other surgeons of recurrence of gall-stones with a silk suture inserted at the previous operation for a nucleus. In order to avoid this the author advises that either catgut be used or that if silk be employed it be left long so that it may be removed.

GELATIN AND SALT-WATER INJECTIONS FOR INTESTINAL HEMORRHAGE IN TYPHOID.

WITTHAUER (*Münchener medicinische Wochenschrift,* Jahrg. 55, Nr. 18) calls attention to the fact that the usual treatment of intestinal hemorrhage during typhoid fever by means of opium, ice-bag, ergotin, adrenalin, and similar measures very frequently fails to bring good results. He has recently used subcutaneous injections of gelatin and saline solution in four severe cases of hemorrhage in typhoid, with good results in three of the cases. He has used gelatin in 10-per-cent solution in the quantity of 50 Cc. to the dose, repeated every day or every other day, and given two to six times while the bleeding lasted. If the patient is conscious gelatin may be given by the mouth. Combined with the gelatin injections are given subcutaneous injections of normal salt, continued until two days after bleeding has stopped. This treatment does not interfere with other supportive measures. The author believes that gelatin and normal salt solution injections are of unusual value in such hemorrhages.

THE TREATMENT OF VENEREAL ULCERS WITH HOT IRRIGATIONS.

ZINSSER (*Münchener medicinische Wochenschrift,* Jahrg. 55, Nr. 18) states that he has for several years used hot irrigations in the treatment of venereal ulcers, and has found that it will in a few days cleanse an unyielding and malignant venereal ulcer and quickly cause subsidence of a phagedenic process. The results have been astonishingly good in cases of gangrenous ulcers with necrosis of the surrounding tissues; excessive, foul exudate; lymphangitis; and high fever.

The treatment is very simple, and consists of irrigation three to five times daily with a stream of potassium permanganate solution, 1:4000, as hot as can be borne. There is used at each sitting four or five liters run from a height of two to three meters in a stream about two millimeters thick. All the angles and nooks of the ulcer must be searched out and cleansed. The temperature of the solution can range from 45° to 50° C. After irrigation the ulcer is dried with gauze, sprinkled with iodoform, and tamponaded with iodoform gauze saturated with spirit of camphor and water equal parts. Over this hot linseed poultices are placed and frequently renewed. In gangrenous cases the treatment should be repeated every two or three hours. Many patients can carry out the treatment themselves when shown how to do it. In twelve to twenty-four hours the entire picture of the disease

will be changed. The necrotic mass has separated, the bad odor has disappeared, the secretion is much less, the temperature again normal. A few days later granulations can be seen at the edge of the wound, and epithelialization has begun.

The most remarkable results are seen in the phagedenic ulcers in which in a short time the entire glans penis has melted away, and in buboes in which the ulceration rapidly spreads over the abdomen or the thigh, and in which in spite of all other forms of treatment the process continues to spread. In these cases the invasion of the tissues stops as soon as the above treatment has been instituted.

PRIMARY PNEUMOCOCCIC PERITONITIS.

SMITH (*British Medical Journal,* May 30, 1908) reports two cases, each beginning with pain, rigidity, and tenderness in the right iliac fossa, together with hurried breathing, high temperature, and obscure chest symptoms. The diagnosis in each case suggested appendicitis. After some delay the abdomen was opened, evacuating large quantities of pus, in which was found a pure culture of the pneumococcus.

OPERATIVE TREATMENT OF CANCER OF THE COLON.

PETERMAN (*Archiv für klinische Chirurgie,* Bd. lxxxvi, Heft 1) reports 115 cases of cancer of the colon from Rotter's clinic. Of these 68 were males and 47 females. The ages range from twenty to eighty-five; the greatest number were between fifty and sixty years. As to the seat, 56 cases were in the sigmoid, 17 in the transverse colon, 13 in the cecum, 12 in the hepatic flexure, 8 in the splenic flexure, 7 in the ascending and 4 in the descending colon. Of the 115 cases, 58 were operable and 57 inoperable.

In all there were 47 cases of obstruction. These cases withstand operation very badly, and any operation done must be of the most conservative nature. In 30 cases an artificial anus was produced, and of these 14 died; resection of the tumor was done in 14 cases, of which 11 died; side-to-side anastomosis was done in 4 cases, 2 of which died. Of the deaths in obstruction, two were due to pneumonia, and the remainder either to collapse at operation or peritonitis. In case of obstruction, if the tumor was operable, an artificial anus was formed in the cecum or ileum, and at a later operation the tumor was removed and the fistula closed; if the tumor was inoperable a fistula was produced close above the tumor.

In operable cases in which there was no obstruction and the patient was in fair condition, enteroanastomosis was done so as to eliminate the affected portion of the intestine; when the patient's condition was poor a fecal fistula was produced. Of these cases some continued to go down and shortly died; others gained weight and felt relieved and were still living a year after operation.

The radical removal of carcinoma of the colon when done early was, in immediate and remote results, a very satisfactory operation. No definite operative procedure can be recommended for all cases. The choice depends upon the seat of the tumor as well as the age and condition of the patient.

Radical operation was done in 52 cases. The ideal operation consists in resection of the tumor and immediate anastomosis of the intestine. This was done in five cases, in one case twice. This latter patient stood the operations well. The other three died, two of peritonitis from leakage and one of pneumonia.

Resection of the tumor with subsequent anastomosis was done in 12 cases; three died as a result of operation; the remaining cases were well three weeks after the operation, but two of them died later of recurrence. In 23 cases the two-stage operation of Bloch was performed. This consisted in bringing out the tumor, sewing the knuckle of intestine in the belly wound, removal of the tumor, and in this way forming a fistula, which was closed at a later operation. Three of these cases died, but the results in the remainder were very good.

In nine cases a three-stage operation advised by Schloffer was done. This consisted

in first forming an artificial anus; later the tumor was resected and the intestine anastomosed; at the third operation the anus was closed. Two patients did not recover from the operation; the remainder made an operative recovery, but two died later of recurrence.

PYELITIS IN PREGNANCY AND THE PUERPERIUM.

VINEBERG (*American Journal of Obstetrics and Diseases of Women and Children,* June, 1908) states that for the causation of pyelitis in pregnancy two conditions are essential—*i.e.,* obstruction in some part of the genito-urinary tract and pathogenic bacteria. Obstruction may be due to pressure either of a pregnant uterus upon the ureter, or to changes in the vesical mucosa incident to the same cause. Of the infective agents usually it is the colon bacillus which is responsible. The right kidney is the one affected in the vast preponderance of cases. The disease in the majority of cases occurs in the latter half of pregnancy. In some cases the disease is preceded by symptoms of vesical irritability; in others the onset is by a chill followed by a fever, with recurring attacks, the patient becoming promptly septic. The pain may be diffused over the abdominal cavity, and in the course of a few days becomes localized over the region of the affected kidney. Deep pressure elicits tenderness. Thickening and tenderness of the ureter as it crosses the anterior wall of the vagina are present in a certain number of cases. The urine may show no change in the early stage beyond a trace of albumin and a rather high color. In the course of a day or so pus appears, often blood-corpuscles and a few hyaline casts. On bacteriological examination the colon bacillus may be found in pure culture, rarely mixed with staphylococci or streptococci. Coincident with the heavy deposit of pus there is usually a subsidence of the fever and the pain for obvious reasons. The urine may be free from pus for an entire day. In some cases the pyelitis is due to the gonococcus and is an ascending one, and is usually slow and preceded by bladder disturbances. Then, after a shorter or longer interval, during which the bladder symptoms have been entirely forgotten, there develops suddenly high fever with abdominal pain which soon becomes localized to the region of one kidney, and later the pain is felt also in the other kidney. In these cases there is bacteriuria without pus. Pain and tenderness may be present over McBurney's point in pyelitis. It is also felt over the kidney region.

The prognosis is as a rule good, the disease running its course in from seven to fourteen days. A few cases show no such limitation, the disease persisting until pregnancy is interrupted artificially or spontaneously, or relief is afforded by purely surgical measures. Recurrences in the same pregnancy have been observed by some writers. It is not safe to permit a woman to become pregnant again after having passed through an attack.

Treatment consists in rest in bed, ice-bag over the affected kidney, milk diet, a moderate quantity of water, lying on the opposite side to that of the affected kidney, and the administration of some urinary antiseptic, preferably urotropin. If this treatment fails to give relief or the disease runs a very protracted course in spite of the treatment, the question of interrupting the pregnancy or surgical intervention on the affected kidney will come up. In many cases nature will decide the question by bringing on a spontaneous abortion. Nephrotomy has been performed in some cases, with favorable results. In others a ureteral catheter has been passed to the affected side so as to give free drainage to the pus.

LATE RESULTS AFTER OPERATIONS FOR BENIGN DISEASES OF THE STOMACH AND DUODENUM.

MOYNIHAN (*Annals of Surgery,* June, 1908) after a brief review of his operative treatment in this class of cases and his late results submits the following as to lessons to be learned therefrom:

The present condition of all the patients

now alive is as follows: 211 patients are cured; 9 patients are improved; 12 patients are no better; 9 patients are doubtful, 6 patients not recently reported; total, 247.

Thirty-four patients are dead, 18 as a result of the operation, 7 of carcinoma of the stomach, 9 from other causes unconnected with the disease of the stomach, or the operation performed for its relief.

Such is a brief review of the after-history in all his cases.

1. The operative treatment of stomach disorders should be confined exclusively to those cases in which an organic lesion is present. Unless there is a palpable and demonstrable ulcer in the stomach or in the duodenum, or some condition which hampers the proper action of the stomach, the symptoms are not due to any pathological cause capable of being relieved by surgical interference. However careful our preliminary investigations may be, we shall from time to time display upon the operation table a perfectly normal stomach. We must not then endeavor to cover our diagnostic disaster by the performance of an unnecessary operation upon the stomach, but rather must we candidly confess that our exploration has proved negative. To perform gastroenterostomy in such cases has been proved to lead to unsatisfactory results, whereby the operation is discredited.

2. In cases of acute perforating ulcer, the perforation should be closed or the ulcer excised. When the ulcer lies upon the lesser curvature nothing more is necessary than this. The after-history of such cases shows that they are relieved from all disabilities referable to the stomach. When the ulcer is prepyloric, pyloric, or duodenal, gastroenterostomy also should be performed. It doubtless hastens the immediate recovery of the patient by affording an easier exit from the stomach than that impeded by the ulcer, and it forestalls the almost certain onset of symptoms which only a short-circuiting operation can relieve.

3. When a non-malignant lesion is discovered the treatment appropriate to it depends upon its position in the stomach. If an ulcer be placed on the lesser curvature at some distance from the pylorus, in such a position that no obstruction is offered to the onward passage of the food, excision should be performed. In such cases the relief from gastroenterostomy may be incomplete, and it is probable that the later onset of malignant disease occurs in a large proportion of cases. In some cases, however, when the ulcer is on the curvature or on the posterior surface of it, adherent to the pancreas, relief follows if gastroenterostomy is performed on the cardiac side of the lesion. It may be that the ulcer when anchored impedes the proper movements of the stomach, or that the nerve-supply being interfered with some local paresis of the gastric wall results.

4. If the ulcer be prepyloric, pyloric, or duodenal, gastroenterostomy should be performed. It is desirable also to infold an ulcer whenever possible, for both hemorrhage and perforation have occurred from ulcers for which gastroenterostomy has been performed months or years before. The local treatment of the ulcer is always desirable and is generally easily performed.

5. The most satisfactory method of gastroenterostomy is the posterior no-loop operation, with the almost vertical application of the bowel to the stomach. The vertical position is that into which the jejunum falls most easily in the normal (that is, the erect) position of the body. A deviation to one or the other side if slight is of no importance, and entails no untoward consequences.

6. Regurgitant vomiting occurs as a result of the "loop" operation, whether anterior or posterior. It is relieved almost certainly by an enteroanastomosis. Patients who suffer from it may be relieved entirely of all symptoms for which they originally sought relief. An operation that is mechanically imperfect relieves the original disorder, though it leaves serious disabilities behind it. The vomiting of bile may be relieved by lavage, and in some patients disappears entirely after the lapse of weeks or months or even years.

7. In cases of hour-glass stomach the surgical treatment necessary presents special difficulties on account of the frequency

of two lesions—one in the body of the stomach and one at the pylorus, and double operations have consequently to be frequently performed.

DEAVER, writing on a similar topic, and including in his paper a report of his cases, draws from an analysis of these the following conclusions:

1. The operation of choice should always be performed when feasible; when not feasible, the operation of necessity should be performed.

2. All cases of stenosis of the pylorus, whether due to a neoplasm, cicatricial contraction, hyperplasia, pylorospasm, or what not, should be treated by operative interference, preferably by posterior gastrojejunostomy.

3. All cases of ulcer of the stomach which do not respond to medical treatment promptly, and the various sequelæ of this disease, should be treated by operation.

4. All cases of ulcer of the duodenum which do not respond promptly to medical treatment should be treated by operation.

Deaver's preference in performing gastroenterostomy is by the posterior gastrojejunostomy, no-loop, clamp route.

THE TREATMENT OF GANGRENE IN STRANGULATED HERNIAE AT ST. THOMAS'S HOSPITAL, 1901-1905.

CORNER (*Lancet*, June 13, 1908) refers to a previous paper published in the *St. Thomas's Hospital Reports* in 1900 in which was set forth the condition of the bowel found in the strangulated herniæ admitted to the hospital during the ten years 1891 to 1900. Thus a great advance has been made on the condition of affairs at the time of the publication of the first paper, when the mortality for the resection of the bowel and anastomosis in gangrenous strangulated herniæ was 80 per cent.

Since 1900 far more instances of necrosis of the bowel have been recognized and treated than was the case in Corner's original communication.

In the five years from 1901 to 1905 necrosis of the bowel has been recognized and treated 30 times, as compared with 42 in the preceding ten years.

Of the treatment adopted the balance has been in favor of resection and anastomosis of the bowel whenever possible. Eighteen such cases have been done with eight recoveries, a recovery rate of 45 per cent and a mortality of 55 per cent. In the paper published in 1900 the mortality for the resection of the bowel and anastomosis in gangrenous strangulated herniæ was 80 per cent. Several reasons have contributed to the improvement: First, instances of early gangrene or necrosis have been recognized and treated; secondly, cases in which the bowel, being only "doubtful," has been excised, though this must have been infrequent; thirdly, there are the improvements of modern technique, such as the removal of the bowel far above the obstruction. A further point is that those cases in which the resection of the bowel has been followed by anastomosis, circular enterorrhaphy, have done better than when a lateral anastomosis has been employed.

In the same period, 1901 to 1905, there have been ten cases in which the resection was followed by the making of an artificial anus, an enterostomy, from which there has been only one recovery—*i.e.*, 10 per cent, mortality 90 per cent—a result which agrees very closely with the previous findings of 1900. It is true that this treatment by resection and enterostomy has been reserved only for the very worst cases. Yet in spite of modern advances there has been no improvement in the results. During the same period there has been a diminution by 35 per cent in the mortality of those cases treated by resection and anastomosis of the bowel.

Besides resection with anastomosis or enterostomy, two cases have been treated by the invagination of the gangrenous or doubtful area. Both patients recovered, but the method is obviously applicable only to small areas of necrotic bowel, and in practice will be mainly useful for secluding "doubtful" bowel. The mortality is given as follows: Complicated strangulated inguinal herniæ, 37 per cent; complicated strangulated femoral herniæ, 66 per cent;

complicated strangulated umbilical and ventral herniæ, 80 per cent.

Of 216 strangulated inguinal herniæ, gangrene was recognized in 8—3.6 per cent.

Of 133 strangulated femoral herniæ, gangrene was recognized in 12—9.0 per cent.

Of 46 strangulated umbilical and ventral herniæ, gangrene was found in 10—21.7 per cent.

These results are very similar to those announced in 1900.

FLUSHING THE INTESTINAL CANAL.

MONKS (*Annals of Surgery*, June, 1908), as the result of an experimental and clinical investigation, proposes the following technique:

Make a free opening through the abdominal wall in the median line, the incision reaching from the pubes to or above the umbilicus.

Pick up a loop of bowel high up in the wound. Determine by reference to the root of the mesentery which is really the upper and which the lower end of this loop. This determination is essential, if one wishes to know in which direction the salt solution will flow during the process of flushing.

Make an enterotomy wound in the loop. Allow gas and feces to escape, and insert the tube into that arm of the loop which leads in the direction of the ileocecal valve—in other words, insert the tube pointed downward into the gut.

Allow warm salt solution gradually to distend a few of the loops below this opening. If nothing more than this is done in the way of washing, the substitution in the bowel of the warm salt solution in place of the gas and feces that have escaped will presumably help the patient.

If the patient's condition will allow it, pick up the loop which is apparently the lowest of those distended, make a second opening, insert a second tube—this one directed upward—and allow the wash water to run out through the tube until it becomes clear.

Carefully cleanse and sew up the first enterotomy wound, and return to the abdomen that part of the bowel which has been washed out. In fact, as soon as any enterotomy wound is no longer needed it should be cleansed and sewed up, and the loop of bowel which has been sutured should be returned to the abdominal cavity.

Repeat this procedure as many times, consistent with safety, as may seem necessary, each time isolating and cleansing a segment of intestine lower down.

Finally, if the patient's condition will permit further operating, fill the colon with salt solution from the lowest enterotomy opening, and insert a rectal tube to remove any wash water or intestinal contents which may reach the rectum. It is well to insert the rectal tube before attempting to close the abdominal wound, and thus make it easier, by removing some of the wash water in the colon and diminishing its size, to bring together the edges of the wound.

Use great gentleness in all manipulations, and carefully avoid contamination of the peritoneum. The method of protecting the intestines between two layers of rubber dam bids fair to be of real service.

In the event that peritonitis is also present, the peritoneal cavity should be washed out thoroughly, before flushing the intestinal canal, and also after it.

In closing the author states that he does not consider flushing the intestinal canal to be a substitute, in all cases, for tubage of the intestine, or even for ordinary enterostomy. Flushing would seem to be called for only in the most desperate cases—fortunately occurring less frequently, as time goes on—in which the bowels are greatly distended, and in which the patient, overwhelmed as he is with septic or toxic products, will die unless immediate relief is afforded.

CARCINOMA AND SARCOMA OF THE APPENDIX.

HARTE (*Annals of Surgery*, June, 1908) as the result of a careful study of this subject arrives at the following conclusions:

Primary carcinoma of the appendix is present in from one-third of one per cent to one per cent of all cases operated upon for

chronic appendicitis. But few cases are collected at autopsy.

Institutions which make a thorough microscopical examination of all the appendices removed at operation and at autopsy will report a larger percentage of cases of carcinoma of the appendix.

Carcinoma of the appendix, especially of the basal or spheroidal-cell type, is a condition of early life, occurring generally between the ages of ten and forty. There is little tendency to metastasis, and the origin of the disease is, as a rule, in the mucosa.

The disease appears to be slightly more frequent in females than in males.

Acute and chronic inflammations are present and are responsible for the symptoms demanding operation. The growth, while localized, gives no pathognomonic symptoms.

The fact that primary carcinoma of the appendix takes its origin in an inflammatory process forms a very strong argument for the removal of appendices which show evidence of any irritation.

THE TREATMENT OF INTRACTABLE HAY-FEVER AND PAROXYSMAL CORYZA BY RESECTION OF THE NASAL NERVE.

YONGE (*Lancet*, June 13, 1908) describes a new method of treatment for the cases of hay-fever which may be termed desperate, where the patient is condemned to an annual period of miserable discomfort and of complete incapacitation. The method is based on the theory that the stimulus which induces the reflex manifestations, including asthma, is conveyed to the centers by the nasal nerve, this nerve being the afferent path of the reflex. If this theory be correct the prevention of the attacks by the resection of the nerve on each side would apparently be possible. The evidence which can be adduced in favor of the theory is briefly examined. In the first place is considered the evidence suggested by the consideration of the distribution and function of the nasal nerve; secondly, that suggested by the effects of the particular form of treatment (cauterizing of the nasal mucous membrane); thirdly, that suggested by bilateral resection of the nerve. The stimulus for the ordinary sneezing reflex is conveyed by the nasal nerve, and it may be conjectured that the stimulus which induces the manifestations of paroxysmal sneezing travels up the same nerve. The sneezing which sometimes occurs when a beam of bright light falls on the eye is generally considered to be also referable to this nerve, the impulse traveling from the eye via the ciliary branches. All the other reflexes, vasomotor and secretory, are usually stated to be conveyed by the nerves of ordinary sensation without reference to any special nerve being concerned. The nasal branch of the fifth is not the only sensory nerve of the nasal cavity, as there are filaments, principally derived from the sphenopalatine ganglion, distributed to the posterior parts of the cavity.

On theoretical grounds the nasal nerve conveys the impulse not only for sneezing but also for the other normal reflexes referred to. Also, this nerve is responsible for the production of the abnormal reflexes which are represented in the condition known as paroxysmal coryza and in hay-fever. The manifestations of hay-fever closely correspond in localization to the areas to which the latter is distributed, and the symptoms are explicable on the assumption that they represent the reflex effects of irritation of the nerve. The nasal nerve not only supplies the anterior region of the nasal cavity, but also sends branches to the conjunctiva, the lacrimal sac, the iris, ciliary muscle and cornea, the frontal sinus, the skin of the alæ and the tip of the nose, and the skin of the upper and lower eyelids. The initial symptom is usually a sensation of itching at the inner canthus. Following upon this is a feeling of irritation in the nose, succeeded by sneezing, nasal obstruction, and hypersecretion. The patient may complain of frontal headache or of a sensation of constriction above the eyes. The eye symptoms consist generally of congestion of the conjunctiva, lacrimation, and redness and swelling of the lids, and a certain degree of photophobia often supervenes. Usually

also there is some redness of the skin at the tip and sides of the nose. The fact that in many instances benefit may be obtained as regards the hay-fever attacks and the paroxysms of vasomotor rhinitis by the application of cocaine during the attacks or of the galvanocautery between the attacks to special areas in the anterior region of the nose, has been recognized for a considerable time. This relief is afforded by cauterizing the mucous membrane in the region supplied by the nasal nerve, which seems to be corroborative of the theory that the terminal filaments of this nerve represent the starting-point of the reflex disturbances and that the partial or total failure of the latter to be induced, in those cases in which the mucous membrane has been cauterized, is referable to the irritability of the terminal filaments having been diminished or abolished.

Finally, as to the effect of bilateral resection of the lateral nerve in various forms of vasomotor rhinitis in which this operation has been performed, the symptoms have been completely and lastingly abolished. In the first case in which the operation was performed, the nerve to begin with was divided on the right side only. The symptoms—intermittent nasal obstruction with profuse hypersecretion—were abolished in the nasal cavity corresponding to that on which the nerve had been divided, whereas the disturbances continued to recur periodically in the opposite nasal cavity, as before the operation. The sensation experienced when these attacks occurred was described by the patient as a "feeling of the nose being divided in half," one side being clear and the other obstructed. The asthmatic attacks from which the patient suffered also continued to recur at intervals. After section of the nerve on the left side the nasal symptoms entirely disappeared and the attacks of asthma ceased.

The author describes his technique in his first case, which was as follows: The nerve was reached by an incision at the inner edge of the orbit, commencing just above the inner canthus and extending upward and slightly outward for about two-thirds of an inch. The cellular tissue having been cleared from the inner upper wall of the orbit by means of a blunt dissector and the nerve located at the anterior ethmoidal foramen, the latter was separated from the artery and divided close to the foramen, about a quarter of an inch of the nerve being removed. Resection of the nerve on the left side was carried out four weeks later. This patient was entirely cured of hay-fever, intermittent attacks of coryza and asthma, from which he had suffered for fifteen years.

EXCISION OF THE RECTUM FOR CANCER.

William C. Lusk (*Surgery, Gynecology, and Obstetrics,* August, 1908) has contributed a profusely and admirably illustrated monograph dealing with the anatomy of the structures involved, and discusses in detail the various operative procedures, with the indications, advantages, and disadvantages of each. Kraske's operation as described by himself and detailed in text-books on operative surgery is well known to the profession. The operation as performed by Kraske himself and described by Lusk is particularly interesting; spinal anesthesia was used:

"The patient at the beginning was placed in the right lateral position with hips raised on a cushion. The buttocks were brought to the foot of the table, facing which the operator worked. Left parasacral incision, running diagonally into or just beyond the median line at a point a little behind the anus. The knife was carried rapidly down in the line of the incision, cutting close alongside the sacrum and coccyx until the fascia propria recti was reached beneath the deep muscular structures. The upper part of the coccyx was then grasped between the blades of a bone-cutting forceps and cut across. Through this approach wide retraction could be gained and there was ample room for all the subsequent steps of the operation. The fascia propria recti was then pushed forward for two or three inches from the front of the sacrum, and the space thus made packed with gauze. The operator next put his left index-finger, specially gloved for the purpose, through

the anus into the bowel, and with it as a guide cut through the fascia propria recti and rectum from behind at a level a little above the internal sphincter, which appeared to be about an inch below the tumor. The division of the bowel was made with short interrupted cuttings, after each of which the edge of bowel above and below was caught up with a heavy silk thread, the ends of which were tied together forming a loop, so that after the bowel was entirely cut across there was a row of traction loops attached to either end by means of which the two segments could be manipulated. A piece of gauze was now placed in the wound over the opening of the distal end to avoid soiling from this source, and for a similar reason a plug of gauze was pushed into the open end of the proximal segment and was held in place by tying together over it some of the opposite-placed traction loops. The wound was now temporarily packed with gauze, while the position of the patient was changed to a dorsal decubitus with hips elevated almost vertically on two or three firm cushions, the thighs being flexed and held by an assistant on either side. This elevation is so high that the portion of the back corresponding to the shoulder-blades is about all that touches the table. The position is one that greatly facilitates the subsequent steps. The left index-finger was now placed in the vagina, and over it as a guide the bowel was dissected free from the posterior vaginal wall, in so doing severing the attachment of the fascia propria recti to the latter on either side, until the cul-de-sac was opened into. The peritoneal opening was enlarged laterally, the anterior peritoneal fold caught up by clamps, and two gauze strips, their ends dusted with a little iodoform powder, were laid through the opening into the peritoneal cavity, one having exit on either side of the bowel. The lateral bowel attachments opposite the cul-de-sac were clamped, evidently at the situation of the middle hemorrhoidal vessels, and then tied and severed. The operator was careful not to raise the bowel very high from off the sacrum. The bowel was severed about an inch above the disease, in a line through the upper portion of the rectum where the latter had a partial peritoneal covering, so that the cut margin of the proximal segment had peritoneal covering only in front. The division of the bowel above the disease was effected by interrupted cuts, the margin of the upper segment as fast as it was thus liberated being sutured to the distal segment below. The bowel was first opened into anteriorly in the line of division, through which opening the interior of the bowel was cleansed, and then the first stitch introduced, which was placed in the anterior median lines of the two bowel ends. The next stitches were placed one on either side of the first one, and then continued equally on the two sides for about three-quarters of the bowel circumference. All these stitches were tied on the inside of the bowel, and a goodly mass of tissue was included in each grasp of the needle so as to coapt broad surfaces along the line of repair. The stitches were tied as they were introduced. For closure of the remaining quadrant situated posteriorly, the stitches were placed outside the bowel inverting the edges of the mucous membrane. At this situation two rows of sutures were introduced, an outer row supporting the inner, and broad areas were brought together. All the sutures were of strong silk and interrupted. During the suturing together of the bowel ends a strip of gauze was laid in front of the line of suture, and at the finish removed. The two pieces of gauze previously inserted into the peritoneal cavity now protruded through the wound on either side of the bowel and were left *in situ*. The wound was finally packed on either side of and behind the bowel from below upward into the sacral concavity. One stitch brought the upper angle of the wound together. The operation was executed very rapidly and the patient was in no shock."

Lusk gives a singularly clear and practical description of the lymphatics of the anus and rectum, the relation to the ureters, and the invasion of the bladder. Thirty-four admirable drawings are contributed illustrating the surgical anatomy of the operative procedures.

Lusk proposes a retrorectal approach which does not mutilate the nerves, renders access to both sides equally easy, provides for good drainage, and should permit of the performance of all operative procedures that ought to be done by this route. It contemplates the production of a broad rather than a high exposure of the rectum. If it be conceded that the removal of a high rectal growth with ligaturing of the superior hemorrhoidal vessels and handling of the sigmoid colon should not be attempted entirely from below, the operative procedures for which the posterior route should be used would seem to resolve themselves into those for (*a*) completion of rectal extirpation in the combined operation, (*b*) local excision of an ampullary growth not necessitating the ligature of the superior hemorrhoidal vessels, (*c*) bowel anastomosis above the anus, and (*d*) drainage.

The proposed approach is illustrated by admirable dissections. The technique is given as follows:

With the patient on the left side, an incision is made in the median line from the fourth sacral vertebra to the upper part of the coccyx; then it turns diagonally over the right edge of the coccyx, avoiding the attachment of the external sphincter at its tip, and enters the fat of the ischiorectal fossa, after which it is continued superficially downward and a little outward to the right, parallel with and a little external to the fibers of the external sphincter, to terminate for the moment at a point just lateral to the posterior margin of the anal canal, which point is directly opposite the site of entry of the inferior hemorrhoidal nerve branches into the external sphincter, lying about one inch beneath the skin surface. To avoid injury to these nerves in dividing the deep tissues, the finger first finds the anal fascia by dissecting through the fat in the angle at the tip of the coccyx, between the gluteus maximus and the external sphincter, and then by pushing along the anal fascia downward toward the anus, splits off the ischiorectal fat until cleavage is arrested by restraining tissues. After division of the latter, the nerves may be exposed by first stripping forward along the fascia covering the external sphincter, beneath which the nerves lie, and then dissecting vertically upward through this fascia in the course of the nerves themselves, which latter may be made prominent by downward traction on the sphincter. An arched skin incision is made across the summit of the longitudinal one, and the skin flaps thus outlined are reflected a sufficient distance from the surface of the glutei maximi muscles to allow lateral splitting and retraction of the deep structures.

The further steps of approach to the rectum through this opening of entrance depend upon whether disarticulation is to be made at the sacrococcygeal joint, or transverse osseous division through the sacrum just below its inferior lateral angles. If the former, the attachment of the right gluteus maximus fibers to the right edge of the coccyx is first severed. The finger can then be hooked beneath the tip of the coccyx to move the bone, thereby discovering the site of its articulation with the sacrum. Then disarticulate the coccyx, dissect it from its anterior connections approaching from the right side, and swing it to the left on the uncut tissues of the left side as a hinge, or remove it entirely. Just in front of the coccyx is a dense structure in which lie the terminations of the sacra media and lateral sacral arteries, which vessels can be preserved from injury by dissecting close to the anterior surface of the bone. This precoccygeal structure, triangular in outline, above has a close attachment to the front of the sacrum, laterally on either side receives the insertion of fibers of the coccygeus muscle, and below supports the median aponeurosis uniting the levatores ani. Its transverse division is of importance to relieve the restraint to lateral retraction of the flap exercised by it in conjunction with the tough median aponeurosis between the levatores ani.

The deep muscular incision is now made, which opens the right posterolateral rectal space. In making this incision the dense structure in the bottom of the space from which the coccyx was removed and the

fascia underlying it should be cut through first, and then the finger introduced through this opening into the right posterolateral rectal space, in a downward direction raises the right levator ani for severance and in an upward direction separates forward the rectum and its covering or fascia propria from the front of the lesser sacrosciatic ligament until it reaches the attachment of the latter to the inferior lateral angle of the sacrum. At the latter situation the margin of the bone is thinned and curves around below the fourth sacral foramen, forming the base line of the lateral mass, which is dissected transversely and is the guide to the upper limit of the incision. Below the level of the lateral sacral angles a narrower terminal portion of the sacrum, consisting of a fifth sacral vertebra body and sometimes the lower portion of the fourth, usually projects downward an inch or more, along either side of which are attached fibers of the gluteus maximus muscle, part of the lesser sacrosciatic ligament, and part of the coccygeus muscle with the fascia underlying it, which structures are the ones divided by the incision. When the incision has been completed, starting at the upper limit of severance opposite the lower margin of the right lateral sacral angle, the deep structures are then split outward toward the spine of the ischium, and the flap thus freed is pulled to the right, thereby opening widely the right posterolateral rectal space. In the lateral splitting of this deep flap as the lesser sacrosciatic ligament is cut, the greater sacrosciatic ligament is met crossing it obliquely, which should not be severed, but instead should have the fibers of the gluteus maximus cut from its posterior surface. In making the portion of the deep incision through the right levator ani, the line of division passes into the right ischiorectal fossa and can be carried together with the skin incision beyond the line of the inferior hemorrhoidal nerves, if the latter have first been dissected out for their avoidance. The left posterolateral rectal space is now entered by pushing the finger from the right space across to the left side at a level just below the tip of the sacrum, and then, hooking the finger downward into the left space, the median septum is raised on it and divided, thereby throwing the two spaces into one. The dense tissue forming the floor of the area from which the coccyx was removed is then divided, catching the terminations of the sacral vessels lying in it, and from the left extremity of the sacrococcygeal joint the gluteus maximus and coccygeus muscles with underlying fascia are split laterally to the left, thus affording as wide access to the left posterolateral rectal space as can be gained at this level, and completing this method of exposure of the rectum from behind.

Transverse osseous division through the sacrum just below its inferior lateral angles, with lateral splitting of the soft parts on both sides at the same level, can be made in order to gain a higher and broader exposure of the rectum than can be obtained by resection of the coccyx alone. This higher exposure can be accomplished either as a later step to the approach shown, or else preferably, without preliminary disarticulation of the coccyx, right after making the deep vertical incision, but here necessarily skirting the coccyx. The division of the bone is made with an osteotome directed transversely, in doing which hemorrhage from the sacral vessels is avoided by prying off the severed segment of bone from the dense periosteum attached to its anterior surface, and then cutting carefully through the latter membrane until a loosely attached tissue immediately in front of it is reached, where the vessels are found and can be readily caught and severed.

Choice of Retrorectal Approach.—The Kraske approach with simple disarticulation of the coccyx, or with the removal in addition of a widely projecting inferior lateral angle of the sacrum below the third sacral foramen, is the preferable procedure when practicable, and would probably suffice in all female cases with broad pelvic outlets. A parasacral incision through the soft parts, with Hochenegg's method of bone removal cutting the sacrum across in a line below the left third and right fourth sacral fora-

mina, would probably be most often applicable in the case of males with outlets of limited size in whom the sacra are of the type having a narrowed lower extremity projecting well below the lateral sacral angles. To the latter class of cases the herewith proposed retrorectal approach would also seem to be particularly applicable. Transverse section of the sacrum below the third foramen would seem to be inevitable in males where there is no projecting central bony extremity below the level of the inferior lateral angles.

THE PROGNOSIS OF SYPHILIS.

In an editorial comment upon this topic the *Medical Record* of July 25, 1908, quotes Waldvogel and Süssenguth's statistics having to do with 297 patients treated for syphilis in the Göttingen clinic from 1873 to 1882, and concludes as follows:

The results are of interest in one respect at least: evil consequences have not at all been as frequent in this series of cases as is usually thought to be the rule by both medical and lay men. No predisposition to tuberculosis seems to have followed syphilitic infection, the number of deaths from this cause being less than the one in three which is the usual rate of mortality from it, according to the data of the German Health Office. Seven patients were affected with tabes dorsalis, and three of them died from this disease. Eleven deaths, or 9.3 per cent of the total 118 deaths, were due to progressive paralysis, three other patients being still alive, though suffering from this supposed sequel of syphilis. The general mortality of the patients when compared with the life insurance figures for the proper age appeared to be higher by 9 per cent; moreover, the average loss-of-life expectation was two years per person. Almost none of the patients gave any history of tertiary symptoms, and at least 109 of the 297 patients recovered good health after the treatment, consisting of inunctions, and sometimes of injections, of mercuric preparations; while another dozen were suffering from various heart, kidney, and lung lesions that could not be looked upon as resulting from the old syphilitic infection.

So far as the immediate victims of specific disease are concerned, these figures little justify the usual view of luetic infection as carrying with it a greatly increased morbidity and mortality. The disease, however, is especially characterized by the damage it does to the descendants of the patients, and the authors whose work we are considering have tried to obtain some data of this aspect of the subject. Of the 265 patients with secondary symptoms, 48 remained single, a percentage which is quite high, considering the rural character of the population treated. The marriages, however, did not seem to have been any less fruitful than the average shown by life statistics. Further figures in reference to other points involved could not be obtained or were based on too few cases to be of general application. One thing seems to be shown by the careful statistical tables of the authors: so far as the material studied by them is concerned, syphilis is no such fateful disease as is usually thought. The comparison with the results of the same infection among town dwellers, as well as the influence of race and country upon the prognosis, would well repay the trouble of any one who has sufficient material open to him for such a study.

LUPUS ERYTHEMATOSUS.

KANOKY (*Medical Record,* Sept. 12, 1908) characterizes lupus erythematosus as a chronic inflammation of the skin, characterized by scaly patches, usually rounded or oval in outline and reddish in color, which are generally followed by scars. These patches may be discrete or confluent, and the face, especially the nasal bridge and upper cheeks, is the region most frequently involved.

The disease may be circumscribed or disseminated. In the former it begins as a small, slightly elevated flat top papule, the bright-red color of which does not completely disappear on pressure. It enlarges peripherally until an infiltrated, scaly patch, varying from one to several centimeters in

diameter, results, the slightly depressed center of which is studded with the openings of dilated follicles. The scales are of a light-yellow or dirty-gray color and can be removed by slight friction. The surface of the affected area is always dry, pinkish or reddish in color, and never ulcerates. At times, after months or years, it exhibits a tendency to spontaneous involution, leaving a soft, flexible, atrophic scar, the surface of which is marked by the patulous mouths of enlarged sebaceous ducts. A frequent clinical picture is the so-called "butterfly" or "bat's wing" marking, the patches on the upper cheeks having become confluent with a narrow band extending over the bridge of the nose.

The scalp is quite often attacked, permanent loss of hair over the affected area resulting. In this locality the scaliness is less marked and the borders are more elevated than on other parts of the body.

The disseminated variety is rare. The inflammation is more acute in character and is accompanied by constitutional symptoms similar in character to those of erythema multiforme. Vascular or even bullous lesions are seen, and the prognosis is extremely grave. Tubercle bacilli have never been found in these lesions. The distinction from acne rosacea is based on the smooth and glistening surface of this lesion, dilated capillaries, the irregular, ill-defined outline, and the predilection it exhibits for the tip of the nose.

Chronic eczema is seldom if ever dry at all times. Itching is more or less intense; the mouths of the sebaceous ducts are not patulous and do not contain the greasy plugs seen in lupus erythematosus, and there is no formation of cicatrices. The non-ulcerating syphilide is characterized by nodular tubercles with a small depressed oval or pigmented scar; it is rapid in evolution, and there are no dilated follicles. Lupus vulgaris is particularly characterized by the presence of the "apple-jelly" nodules, best seen when the areas are examined through a closely applied diascope; the rough, fibrous scars, and the extensive ulceration and tissue destruction are sufficient for recognition. In case of doubt the tuberculin reaction or a biopsy will serve to make clear the diagnosis. There is no specific remedy, and many advised are useless. The milder methods and preparations should always receive the first trial. If there is much irritation or hyperemia, a soothing application, such as zinc oil (zinc oxide 60.0, olive oil 40.0), or calamine lotion, should be employed for several days, meanwhile administering salicin internally.

If the lesions are non-inflammatory, pale, and anemic, they must be painted with a strong iodine preparation, repeating it three times each week, and administering the salicin internally. Here the latter may be alternated with quinine, or the cinchona salt substituted altogether.

Where the induration is marked and the condition notably sluggish, agents possessing marked stimulating power are indicated. Salicylic or pyrogallic acid, suspended in collodion, is desirable.

℞ Acid. salicylic, 40.0;
Acid. pyrogallic, 10.0;
Collodion, 100.0.

The Roentgen ray is not nearly so valuable here as in true lupus, and the arc lamp of Finsen has also proved disappointing. The liquid-air treatment recommended by Fox, Dade, and others would seem an excellent procedure, and the use of carbon dioxide snow even better and more practical. Under the treatment above outlined excellent results may be obtained in a large percentage of cases, especially if the affection is seen early.

DEFERRED OPERATIONS FOR INTRA-ABDOMINAL HEMORRHAGE DUE TO TUBAL PREGNANCY.

SIMPSON (*Surgery, Gynecology, and Obstetrics,* July, 1908) submits four propositions as indicating the line of thought which his paper embodies: (1) Extra-uterine pregnancy is always a grave affection, and operation should usually be done at the earliest elective period and under elective conditions. (2) It seems within the range of possibility that, by a readjustment of

teaching regarding early symptomatology and prognosis, the vast majority of the cases may be recognized and appropriate treatment instituted during the non-tragic, which is the safe stage of the disease. (3) Operation when the patient is acutely ill is always serious. This is particularly true if the operator be unskilled or the surroundings unfavorable. (4) A consideration of the general subject of hemorrhage, the writings of many operators, and his personal experience lead the author to believe that intra-abdominal hemorrhage due to ectopic gestation does not necessarily have as high a mortality as prevalent teaching would indicate.

These propositions he elaborates into a forceful argument and illustrates by clinical reports. The following are his conclusions:

Extra-uterine pregnancy is always to be looked upon as a serious affection, though not necessarily immediately fatal. In substantiation of this fact he submits one hundred consecutive cases without mortality from hemorrhage.

It usually requires operation. Pending that procedure the patient should be handled with extreme care.

Operation when a patient is acutely ill is always serious. This is particularly true if the operator be unskilled or the surroundings unfavorable.

The decision for immediate operation is at times entirely proper, but it should rest upon a low mortality for such operations in the individual operator's hands, rather than on the essentially high mortality the disease has been credited with having.

TEN CASES OF PERFORATION AFTER GASTRIC ULCER.

MORTON (*Bristol Medico-Chirurgical Journal,* September, 1908) has operated on ten cases of gastric perforative ulcer, with three recoveries. He notes that after the sudden violent onset there is often a latent period which may be deceiving. He observes that in two of his cases appendicitis was diagnosed, calling attention to the fact that in 19 out of 51 such cases of duodenal perforative ulcer collected by Moynihan a diagnosis of appendicitis was made. Moynihan attaches most importance to rigidity of the abdominal wall, though in one case in which there was general peritonitis there was neither rigidity nor tenderness, the patient being profoundly collapsed. It is noted that sharp abdominal pain, vomiting, distention, and collapse may occur at the beginning of menstruation and may closely simulate perforating gastric ulcer. The pelvis should be examined in all cases, if not by a separate opening, at any rate by inserting into it a sponge on a holder. If fluid is found suprapubic drainage should be practiced. The right kidney pouch and the left loin can both be drained by long split tubes with gauze wicks from the anterior abdominal wound, but in some cases of very extensive infection of one or other loin a counter-opening may be advisable. Drainage is practiced in every case. All of Morton's cases were anterior perforations.

AURAL COMPLICATIONS OF INFLUENZA.

MOLE (*Bristol Medico-Chirurgical Journal,* September, 1908) notes that in adults influenza is one of the commonest causes of suppurative otitis. Influenzal otitis media may also be non-suppurative, characterized by pain, congestion, and deafness, and relieved by antiseptic sprays or irrigations to the nasopharynx, instillations of a few drops of warm carbolized glycerin into the meatus, and hot dry applications over the ear. A brisk aperient should also be administered. This is followed by inflation of the middle ear on the subsidence of inflammation. A sequel to this non-suppurative otitis is chronic adhesive middle-ear catarrh. Suppurative otitis media of influenzal origin is a hyperacute process, often characterized by hemorrhagic blebs on the drum and on the deeper part of the meatus and by extension to the mastoid process. Intense pain and deafness are characteristic features, nor is the pain necessarily relieved when the drum bursts, or has been incised, thus differing from other forms of suppurating middle-ear

trouble. Bulging of the drum should be treated by free incision of the membrane from top to bottom behind the handle of the malleolus.

After incision the ear should be cleansed, dried, and packed down to the perforation with a strip of moist antiseptic gauze as often as is necessary. When the patient's friends have to carry out the treatment irrigations of warm boric lotion are advisable. Where drainage is freely provided after this treatment it is usually efficacious. If healing is sluggish, boric acid instillation is employed or carbolic acid and glycerin 1 to 10 is instilled after the ear has been cleansed and dried. A small spontaneous perforation should be enlarged by incision. Irrigations and syringing are practically useless unless this be done. After the perforation is firmly healed a course of instillation through the Eustachian tube is desirable.

If after three weeks of drainage there is no evidence of healing, it is obvious that either the drainage is inadequate or the mastoid process is involved. Under such circumstances the antrum must be opened and drained and the tympanic cavity washed out by this route. A persistent tenderness for the first few days, with no abatement of the discharge, with or without swelling and with edema over the mastoid process, indicates operation without delay. Usually it will be needful to remove the whole of the outer cortex from apex to antrum. In cases of influenzal deafness due to neuritis of the auditory nerve, or changes in the labyrinth, strychnine either hypodermically or by the mouth represents the best treatment.

ESOPHAGOSCOPY.

FULLERTON (*Glasgow Medical Journal,* June, 1908) states that this procedure will never become very general or popular because it involves time and care, and cases requiring its aid are comparatively few in number. Credit for devising the first instrument is given to Bozzini, who in 1807 predicted a great future for his endoscope. The tube should be provided with a scale of centimeters or inches beginning at the lower end so as to indicate the distance of the tube in the gullet. There are three important measurements which are taken from the edge of the upper incisors—to the cardiac end of the stomach, 40 centimeters (15¾ inches); to the bifurcation of the trachea, 26 centimeters (10¼ inches); to the upper border of the cricoid cartilage, 15 centimeters (or 6 inches). The esophagus is normally constricted at these three points, the narrowest being that met with at the cricoid.

On examination the stomach should be emptied. An anesthetic is usually required only in the case of children. Local anesthesia is sufficient, and for this purpose, under guidance of the laryngeal mirror, a 10-per-cent solution of cocaine is painted over the posterior pharyngeal wall, epiglottis, opening of the larynx, and posterior cricoid region. It is well to pass the cocaine-saturated swab into the upper end of the esophagus and allow it to remain for a short time in that position.

Esophagoscopy may be undertaken in three different positions: The patient sitting on a low stool, with the neck extended and head thrown back, and held in that position by an assistant who stands behind the patient. Here the tube is best passed backward, under the guidance of the index-finger of the left hand, which is placed on the base of the tongue, so as to pull the tongue and larynx forward. This position is unsuitable where there is a copious flow of saliva, as is usually the case when a stricture is present.

The recumbent position must be adopted when the examination is prolonged, or when a general anesthetic is used. And here we can either use Mikulicz's lateral position or that with the patient lying supine with his head over the end of the table and supported by an assistant. It should be borne in mind that the gullet after passing through the diaphragm turns sharply to the left and forward, in which case the passage of an instrument into the stomach will be facilitated by having the patient lie on the right side. It is best to pass the tube over a well-fitting, flexible bougie, after both have been

warmed and lubricated with vaselin and the head placed in such a position as to form as near as possible a straight line from the run of the gullet to the upper incisor teeth. If the mischief is seated far down, three or four inches of the bougie may be allowed to project beyond the end of the tube, and holding both like a pen, and in such a way that they cannot move separately, they may be introduced directly without the intervention of a finger. Thus guided the tube in many cases follows with ease. It is often an advantage to approach by the left pyriform sinus. The tube is passed for 10 centimeters, and the patient is then asked to swallow. By this act it is usually carried down 14 to 16 centimeters—*i.e.*, to the cricoid. At this point the patient is allowed to breathe quietly for a time, then is asked to again swallow, when without force it can be guided down past the constriction. Having once passed this, the narrowest part, the pilot bougie may be removed, the tube carefully pushed forward under guidance of the eye, and in this way the walls of the esophagus are gradually brought into view and examined before being disturbed. The mucous secretions of the stomach present in the tube must be washed out, pumped out, or mopped away. Difficulty in passing an instrument is usually due to spasm of the inferior constrictor, or to having the head thrown back too far. In the former case steady pressure is sufficient, and at no time should force be exercised. In the case of impacted foreign bodies the tube is especially useful by enabling us in many cases to effect their removal without recourse to the comparatively dangerous operation of esophagotomy. It should be employed early before any other instrument has been passed.

REVIEWS.

PULSATING EXOPHTHALMOS. By George E. de Schweinitz, M.D., and Thomas B. Holloway, M.D., Instructor in Ophthalmology in the University of Pennsylvania. W. B. Saunders Company, 1908.

This monograph of 125 pages, with its graceful dedication to "The Surgical Staff of the Hospital of the Medical Department of the University of Pennsylvania," presents in an attractive form the principal facts concerning pulsating exophthalmos. A knowledge of these facts is of great interest and importance to the surgeon and the ophthalmologist. The preface states that "the object of the essay is to compare the therapeutic measures, surgical and otherwise . . . and to endeavor to determine from these analyses those surgical procedures which seem likely to prove of the greatest advantage in the control of the symptoms."

The number of cases collected from the literature which have not been hitherto collated is 69 (80 in all, of which 11 are doubtful or atypical), sufficiently large to draw safe deductions and to establish rules of treatment to be followed in the management of cases in the future.

The most frequent cause of pulsating exophthalmos is a communication of the internal carotid artery with the cavernous sinus. The less common causes are aneurism of the internal carotid and aneurism of the ophthalmic artery, and tumors of the brain which have found their way into the orbit, and tumors originating in the orbit. The disease is usually traumatic, but may be spontaneous. The symptoms—exophthalmos, pulsation, bruit, venous swellings adjacent to the globe, and tortuosity of the lid veins—are well known. The authors lay stress on the "bruit de piaulement," which manifests itself as "a rather musical murmur with a high whistling tone, demonstrable in some cases and doubtless overlooked in other instances, probably on account of its intermittent character." It is believed by some writers to be characteristic of arteriovenous communication. In the section on treatment, which after all is the

practical side of the interesting topic, are considered: (1) Ligation of the larger blood-vessels of the neck: 34 ligatures; cured or improved 17, recurrence 8, negative results 6, deaths 4. (2) Operations upon the orbit: 7 cases of operation upon the superior ophthalmic vein have been reported since 1897, and "in view of the uniformly successful results it would seem that this procedure should be considered before ligation of the carotid, and certainly should precede ligation of the second carotid." (3) Compression of the common carotid: 12 cases with one cure and 3 improved. (4) Direct compression of the venous swelling in the eyelids and angle of the orbit: 3 cases without satisfactory results. (5) Gelatin injections: 3 cases and one cured. (6) The administration of certain drugs and rest in the recumbent posture: 6 cases and one cure by potassium iodide and adrenalin.

The last 50 pages are devoted to tables of details of 80 cases arranged according to the date of publication of the articles describing them, and finally an index.

An admirable feature of the book is the references to the literature. The bibliography is complete, and hence the work is valuable not only as a perfect description of the disease but as a reference book.

H. F. H.

Diseases of the Spinal Cord. By R. T. Williamson, M.D., F.R.C.P. Henry Frowde, The Oxford University Press, London, 1908.

Dr. Williamson is known to many American physicians who are interested in neurology because of his clinical contributions to this subject, and also because of the valuable summaries of neurological literature which he contributes from time to time to the *Manchester Medical Chronicle*.

The present book is an excellent summarization of the subject of which it treats. The first part is devoted to a consideration of the structures of the spinal cord, and its normal and abnormal histology. The illustrations in this portion of the book are numerous and excellent, both in the sense that they are well executed and that they actually show what the author is attempting to describe. There are one or two exceptions to this, however, as, for example, Figs. 3*A* and 3*B*, which are somewhat blurred in the printing. The diagrams illustrating the tracts and commissural fibers in the cord are unusually good and are in accordance with the latest views concerning this somewhat complex anatomical subject. The third section is devoted to the functions of the spinal cord in health, and the fourth to the symptoms of spinal disease, while the fifth deals with the electrical examination, examination with the *x*-rays, and lumbar puncture. We are interested in noting that the author believes that lumbar puncture is a valuable aid in diagnosis in many cases, and also recognizes that it is capable of producing dangerous results. We do not think that he gives enough consideration to the diagnostic value of examinations of the spinal fluid, microscopically and chemically, and while he describes the method by which the puncture is to be made, but nine lines are devoted to the bacteriology of the subject, and less than a page to the character of the cells which are found in this fluid. Proceeding from these methods of diagnosis he takes up the diagnosis and localization of diseases of the spinal cord from the standpoint of symptomatology, subjective and objective, and then goes on to a consideration of the diseases causing symptoms of transverse lesion of the cord, those causing atrophic and spastic paralysis, and then those in which ataxia is a prominent symptom, grouping in this class not only tabes dorsalis and degeneration of the posterior lateral columns, but also changes which take place in the spinal cord in severe toxemia, in pellagra, in arterial disease, and in diabetes. The eleventh chapter is devoted to spinal meningitis in its various forms, and after this there is a careful consideration, although a somewhat brief one, of spinal syphilis, and of traumatic affection of the cord. Lastly there is an appendix in which the methods of examining pathological specimens, derived from the spinal canal, are described in limited degree, but sufficiently fully for beginners, or

at least sufficiently fully to make the text clear when descriptions of staining methods are spoken of. The book is one which will prove highly useful to general practitioners in particular and to neurologists as well.

A Manual of Clinical Diagnosis. By James Campbell Todd, Ph.B., M.D. Philadelphia and London, W. B. Saunders Company, 1908.

In this book of about three hundred small octavo pages Dr. Todd has presented a clear, though condensed, account of the more important laboratory methods of established utility. Apart from the purely technical descriptions, which are satisfactory, the manual contains a helpful chapter on the use of the microscope, and also a brief commentary, at the end of each section, on the interpretation of the various chemical and microscopic data therein mentioned. While Todd's manual can be recommended as a safe guide for the student who seeks to acquire the essentials of clinical laboratory methods, abbreviated literature of this sort cannot take the place of more comprehensive treatises—but this is not the author's intent, as he states in the preface, and therefore criticism on this score is disarmed in advance.

J. C. DA C., JR.

Golden Rules of Dietetics. By A. L. Benedict, A.M., M.D. C. V. Mosby, St. Louis, 1908. Price $3.00.

The object of Dr. Benedict in compiling this book upon dietetics has been not to provide the active practitioner with a purely scholastic scientific research upon food values but to present scientific knowledge coupled with practical methods in such a way that the physician will find them useful in practice. After dealing first, rather briefly, with the physiological chemistry of foods and the daily needs of the human body, he proceeds to a consideration of the methods of checking diet by weight and excretions, the transmutability of foods and their waste, and then discusses the methods which are employed in predigesting foods. He also discusses preserved foods and methods of cooking. His fourteenth chapter discusses somewhat briefly the purin bodies. Perhaps the most important of the chapters is the twelfth upon the composition of foodstuffs, and the fifteenth upon the important constituents of foodstuffs aside from proteids, fats, and carbohydrates. He also considers distinctly deleterious foodstuffs and the general hygiene of eating, infant feeding, and diet in the various disorders of nutrition, whether they occur in infancy, in diabetes, or in gout. The remaining chapters of the book are taken up with the diets which are useful in diseases of the various organs, digestive and otherwise, in blood and bone diseases, and diseases of the nervous system and before and after surgical operations.

While the volume does not profess to be anything like as exhaustive and comprehensive as Dr. Gilman Thompson's well-known book upon "Dietetics," the author has succeeded in doing what he started out to do, and has presented us with a valuable little handbook on this important subject, which is not given the attention which it deserves by many physicians.

The Age of Mental Virility. By W. A. Newman Dorland, M.D. The Century Co., New York, 1908. Price $1.00.

The substance of this little book, if not all of it, is reprinted from an article by Dr. Dorland which appeared some months ago in the *Century Magazine*. The object of the writer has been to controvert the view advanced by Dr. Osler that most of the great intellectual work of the world has been accomplished by men under forty years of age. Although the book is small, it reveals an extraordinary amount of research into the minds of well-known men who were eminent because of their mental attributes. The first chapter deals with the world's chief workers and thinkers; the second with the period of mental activity; the third with unusual mental activity in the young; the fourth with the acme and duration of mental activity; the fifth with what the world might have missed; the sixth with genius and insanity, and the seventh with the brain of genius. The book closes with a remarkable table, giving the name, the date of birth, the age of beginning activity, the age

of chief activity, the chief work, the age of recession, the duration of mental activity and the date of death, with the years of age at the time of death. It includes astronomers, mathematicians, divines, dramatists, essayists, jurists, naturalists, novelists, philosophers, poets, reformers, satirists and humorists, statesmen, inventors, chemists, explorers, composers, physicians and surgeons, and last of all warriors. If there ever was a small volume of about 200 pages which contained more interesting information and showed more real literary research we would like to be informed of its existence.

THERAPEUTICS: ITS PRINCIPLES AND PRACTICE. By H. C. Wood, M.D., LL.D. Thoroughly Revised and Rewritten by Horatio C. Wood, Jr., M.D. Fourteenth Edition. The J. B. Lippincott Co., Philadelphia, 1908.

The announcement of the appearance of the fourteenth edition of Dr. Wood's well-known treatise on Therapeutics is not only of interest to every practitioner, but in addition will serve to bring back memories of student days to many who have had the privilege of sitting at the feet of this well-known apostle of this department of medical learning. The book is to-day, as it has always been, an exhaustive one, embodying an immense number of quotations from the writings of pharmacologists in all parts of the world, and from time to time pointing out directly the influence which these researches have had, or ought to have, upon the practical application of therapeutics to the cure of disease. Under the skilful editing of the junior author the book has been brought well up to date. We note with interest that in the therapeutic discussion of hyoscine nothing is said of the value of this remedy in the treatment of the morphine habit or in alcoholism. The statement that atropine increases blood-pressure seems to be contradicted by the recent investigations which have been made concerning the influence of this drug, since in all probability it exercises a different effect upon blood-vessels in different portions of the body. These minor criticisms, however, are as nothing compared to the thoroughness with which the book has been compiled and revised. It will undoubtedly maintain, in its present form, the high place in medical literature which it has filled so ably for more than a generation.

PULMONARY TUBERCULOSIS AND ITS COMPLICATIONS. By Sherman G. Bonney, A.M., M.D. Illustrated. W. B. Saunders & Co., Philadelphia, 1908. Price $7.00.

This very exhaustive book, which covers nearly 800 pages, has been contributed to medical literature by a physician who for many years has been particularly interested, both personally and in general practice, in the subject of which it treats. It is both interesting and encouraging to note that one who has experienced the touch of the sapping tubercle bacillus should, after a life in a proper climate over a number of years, have been willing and able to produce so excellent and so exhaustive a treatise, for this book deals not only with pulmonary tuberculosis in general and its complications, but has especial reference to the diagnosis and treatment which should be carried out by the general practitioner.

As the author well points out in his preface, it is quite impossible to present an exhaustive treatise upon all phases of pulmonary tuberculosis in a single volume. The work is not designed so much for the benefit of skilled specialists in the treatment of pulmonary disease as it is for general practitioners and students, but although this is the statement of the author, there is much in its pages which will profit the specialist in pulmonary disease if he will give it careful study. The book is illustrated not only with ordinary black-and-white illustrations, but with a number of excellent colored plates which are not only a credit to the author and his publishers but to American lithography as well.

After opening chapters upon the etiology and pathological anatomy of pulmonary tuberculosis, the author proceeds to a historical review and then to a description of the tubercle bacillus and to the methods by which it produces its infection through the

respiratory or alimentary tracts and by other means. He then discusses the development of the disease in different races, its geographical position, and the effect of geographical position upon patients who are infected by it. The pathology of the disease is then taken up, and after this, in Part II, the symptomatology, course and varieties, and finally the termination of pulmonary tuberculosis. Part III contains a discussion of the physical signs. Part IV deals with diagnosis and prognosis, and Part V with complications. Part VI considers the prophylaxis, general treatment, and specific treatment of pulmonary tuberculosis. There are one hundred chapters, and every phase of diagnosis and treatment is carefully discussed. The book closes with personal observations upon the use of bacterial vaccines and with the author's conclusions in regard to their value.

This is by long odds the most exhaustive book upon this subject which has appeared in medical literature in America, and the author deserves hearty congratulations upon the completion of a by no means easy task in a highly satisfactory manner.

ANATOMY: DESCRIPTIVE AND SURGICAL. By Henry Gray, F.R.S. Seventeenth Edition, Thoroughly Revised. Lea & Febiger, Philadelphia, 1908.

This work, which is familiar to almost every one who has graduated in medicine during the last fifty years, has appeared once more, this time under the careful supervision and editing of John Chalmers Da Costa, Professor of the Principles of Surgery and Clinical Surgery in the Jefferson Medical College, and Edward Anthony Spitzka, Professor of General Anatomy in the same institution. These two authors, combining the needs and skill of the practical surgeon with the knowledge and the skill of the technical anatomist, have succeeded in bringing the text of "Gray" up to the present state of anatomy as it exists for the scientist and active practitioner. Although something remains of the original text, the book now represents, as it has always done, modern anatomy in every sense of the word. Particular attention has been paid to surgical anatomy, to developmental anatomy, and also to the anatomy of the nervous system, both macroscopic and microscopic. So far as we know there has never been a time when it can be said that Gray's Anatomy was not kept up to the mark by a competent editor, but this is the first instance, we believe, in which there has been so fortunate a combination of active surgeon and scientific anatomist in the preparation of a new edition.

PAIN: ITS CAUSATION AND DIAGNOSTIC SIGNIFICANCE IN INTERNAL DISEASES. By Rudolph Schmidt. Translated and Edited by Karl M. Vogel, M.D., and Hans Zinsser, A.M., M.D. The J. B. Lippincott Co., Philadelphia, 1908.

That pain is a manifestation of a large number of the symptoms to which human beings are susceptible is, of course, a well-recognized fact. The present volume is an attempt on the part of Dr. Schmidt to increase our knowledge of the diagnostic value of pain as indicative of the particular area of the body which is affected, and with the aid of the editors and translators he has made a very acceptable presentation of his subject, discussing quite thoroughly the relationship which exists between painful areas and disease in internal organs, and closing the volume with a considerable number of diagrams in which painful areas are shown in contrast to the position of those internal organs which cause the suffering. The book is not, of course, intended for students, but may be read by practitioners with much advantage.

DISEASES OF THE SKIN AND ERUPTIVE FEVERS. By Jay Frank Schamberg, A.B., M.D. Illustrated. W. B. Saunders Co., Philadelphia, 1908. Price $3.00.

The very large experience which Dr. Schamberg has had in the diagnosis and treatment of the infectious eruptive diseases has prepared him thoroughly for the compilation of this most excellent volume, which is designed for the general practitioner and student rather than for the specialist in diseases of the skin. The illustrations and photoengravings are all of them excellent. The treatment is illustrated by the actual prescriptions which the author thinks ad-

vantageous, and the clinical descriptions of the symptomatology and diagnosis are clear and to the point. Indeed, the book may be considered a model handbook for students and practitioners, and we would like to see it used side by side with standard text-books upon the practice of medicine in every school.

PROGRESSIVE MEDICINE. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by H. A. Hare, M.D., Assisted by H. R. M. Landis, M.D. Volume III, September, 1908. Lea & Febiger, Philadelphia, 1908.

The present issue of Progressive Medicine contains, as has the September issue since this periodical was first issued, articles upon Diseases of the Thorax and its Viscera, Dermatology and Syphilis, Obstetrics, and Diseases of the Nervous System. The first is written by Dr. William Ewart, of London; the second by Dr. W. S. Gottheil, of New York; the third by Dr. Edward P. Davis, of Philadelphia, and the last by Dr. William G. Spiller of the same city. These names are a guarantee of the fact that the articles are prepared by authorities in their various departments, and that they are written by men in active practice who know what the general practitioner is most interested in.

A TEXT-BOOK OF NERVOUS DISEASES AND PSYCHIATRY. For the Use of Students and Practitioners. By Charles M. Dana, A.M., M.D., LL.D. Seventh Edition. William Wood & Co., 1908.

Those who are familiar with the earlier editions of Dr. Dana's exceedingly popular Text-book of Nervous Diseases will note the very material increase in size which has taken place since the first edition was presented to the medical profession. The seventh edition has been chiefly changed in that the author has brought up its articles to such a position that they are side by side with neurology as it exists to-day. When the first edition appeared little could be said in regard to the finer anatomy of the nervous system in the sense in which it has been developed during the last ten years, but even at that time Dr. Dana's book separated itself from most other works upon the same subject in that he took pains to describe as far as possible the minute anatomy of the structures involved in nervous disease. He has added something in the present edition upon psychotherapy and certain mental states, and has added a good deal to the subjects of neuritis, tabes, multiple sclerosis, and brain tumor. A number of the old illustrations have been taken out and new ones substituted. The book stands to-day, as it has been always, a credit to American medical literature, and one of the best, if not the best, of the medium-sized works in any language upon this important subject.

AN ALABAMA STUDENT AND OTHER BIOGRAPHICAL ESSAYS. By William Osler, M.D., F.R.S. The Oxford University Press, London, 1908.

To those who are familiar with Dr. Osler's volume of essays entitled "Æquanimitas" it will be gladsome news that he has presented us with another volume of essays on somewhat similar lines, although in this instance the entire book is strictly biographical. We confess that we do not see as much to admire in the Alabama student, whose career gives title to the book, as in some of the other lives which Dr. Osler discusses, notably that of Beaumont, Harvey, and Oliver Wendell Holmes. Perhaps the most interesting to the average reader will be the biography of "Thomas Dover, Physician and Buccaneer," who has come down to modern fame as the originator of Dover's powder. All of these essays have heretofore been published in various magazines, chiefly the *Johns Hopkins Hospital Bulletin*, and are therefore not new contributions to medical literature. They show Dr. Osler's skilful touch and command of medical literature and classical literature as well. The tribute which he pays to Alfred Stillé and the essay upon "The Influence of Louis on American Medicine" are particularly interesting to American physicians. Indeed, the greater portion of the book deals with American physicians and their doings rather than with those upon the other side of the water, which is natural in view of Dr. Osler's early career in Canada and the United States.

AIDS TO TROPICAL MEDICINE. By Gilbert E. Brooke, M.A., L.R.C.P. William Wood & Co., New York, 1908. Price $1.00.

The so-called tropical diseases have been brought so much nearer home by the extension of the territory of the United States to Hawaii and the Philippines that they possess far more interest to American physicians than they did a few years ago. This little volume, which only covers about 165 pages, and which is small enough to be slipped into the pocket of an ordinary jacket, discusses most of the tropical diseases which are commonly recognized at the present time in a way which will probably prove exceedingly useful to students who attend lectures upon this subject, and also to physicians who are going up before examining boards prior to taking medical service in the Army, Navy, or Marine Hospital Service. The descriptions which are given are necessarily exceedingly brief, but usually adequate. The volume cannot take the place of more complete ones, such as that of Sir Patrick Manson or that of Scheube, but can be well employed for "brushing up."

AIDS TO OPHTHALMOLOGY. By N. Bishop Harman, M.A., M.B., F.R.C.S. Fourth Edition. William Wood & Co., New York, 1908. Price $1.00.

The previous editions of this little book have been prepared by Mr. Jonathan Hutchinson, Jr. This, the fourth, is taken up for the first time by Mr. Harman, who speaks in his preface of the fact that it has already proved exceedingly popular for the class of persons for which it was designed. The fact that Jonathan Hutchinson, Jr., compiled the first edition is impressed upon us by reason of Fig. 31, in which the so-called notched teeth of hereditary syphilis are shown, which is somewhat remarkable in a little book devoted to the eye. This is probably due to the well-known interest which Mr. Hutchinson's father has always had in teeth having this formation, the so-called "Hutchinson teeth," upon which, in these days, physicians are not inclined to place the importance that they did at that time, so far as their diagnostic value is concerned. The opening pages deal with the examination of the eye and eyelid, and then the diseases of various portions of the eye are discussed, including the disorders and diseases of the extraocular muscles, closing with the eye conditions of schoolchildren. Quite a copious index concludes this little volume, which is, however, too limited in scope to be used as a text-book.

THE BABY: ITS CARE AND DEVELOPMENT. By LeGrand Kerr, M.D. Albert T. Huntington, Brooklyn, 1900.

Dr. Kerr, who has already contributed a much more pretentious volume to medical literature in the shape of a book upon the diagnostics of the diseases of children, has prepared this little manual for mothers and prospective mothers, and has endeavored to carry out that difficult task in which the author must give sufficient advice without giving too much. He tries to avoid trespassing upon the duties of the physician. The book, like other books upon the same subject, deals with the hygiene of infancy, the methods of rearing the child, and the way in which it should be nursed and fed in the different months of its life up to two years of age. It concludes with a good chapter on artificial feeding, with the management of the sick child, with a "dietary" in which a number of food preparations are described, and with recipes for their preparation included.

HYGIENE FOR NURSES. By Isabel McIsaac. The MacMillan Co., New York, 1908. Price $1.25.

Naturally enough this volume is not of particular interest to physicians, although it contains much which physicians necessarily order the nurse to do. Copious quotations are made from the standard works upon hygiene and dietetics. For the class for which it has been prepared it is entirely adequate and can be commended.

A VADE-MECUM OF TREATMENT. By Edward C. Seufert, M.D., and John Stuart, B.A., M.A. W. T. Keener & Co., Chicago, 1908.

This little book is an attempt, the authors tell us, at utility rather than originality. Indeed, they think that in therapeutics "originality is justly regarded with a con-

siderable degree of suspicion," and perhaps they are right. In the discussion of the treatment of each malady they have given a prescription such as they think is useful to meet the condition which exists, but they recognize the limitations of therapeutics. Information is also given in regard to the treatment of tropical diseases, such as are met with in Cuba, Porto Rico, the Philippines, Panama, and Hawaii. While we cannot subscribe to all the advice which is given, most of it can be said to be very good. The subjects are arranged alphabetically, so that the first condition discussed is "Abortion," and the last ones "Yellow Fever" and "Poisoning with Zinc Salts."

GREEN'S ENCYCLOPEDIA AND DICTIONARY OF MEDICINE AND SURGERY. Volume IX. William Green & Sons, Edinburgh and London.

We have already reviewed in terms of high praise the preceding volumes of this excellent encyclopedia. The present volume extends from the word "Rhinolith" to "Thermotaxis," and as the alphabetical order indicates, brings the series almost to a conclusion. The author, Dr. Ballentyne, is to be congratulated upon the skill with which he has carried through a difficult piece of editing, and as the most recent encyclopedia upon this subject it can be cordially commended to those who wish to possess an exhaustive work on medical topics.

CONSUMPTION: ITS PREVENTION AND CURE WITHOUT MEDICINE. By Charles H. Stanley Davis, M.D., Ph.D. Second Edition, Enlarged. E. B. Treat & Co., New York, 1908. Price $1.00.

The ready sale of the first edition of this book has caused the author to carefully revise the present volume. The book is designed more for patients suffering from tuberculosis and for the friends of such patients than for physicians. It deals in a clear way with the modes of onset of the disease, with the hygiene, and the life that a tuberculous patient should lead, including his diet and fresh air. It also discusses the important question of marriage in this class of patients.

The chapter upon the symptoms and diagnosis of tuberculosis is, of course, a difficult one to write, since it is impossible for a layman to arrive at a correct diagnosis in many cases, and some of the things that are said might perhaps cause unnecessary alarm. The statement that if a correct diagnosis is made in the early stages of the disease we can almost certainly bring about complete arrest is one which applies only to a certain number of cases, and while advantageous in that it encourages the invalid, may produce bitter disappointment and reflect seriously upon perfectly competent physicians. We are glad to see that the author is opposed to the use of the tuberculin test in diagnosis, as this position should certainly be maintained in a book which is designed largely for the laity.

THE LAW IN GENERAL PRACTICE. Some Chapters in Every-day Forensic Medicine. By Stanley B. Atkinson, M.A., M.B., B.Sc. London: Henry Frowde, Oxford University Press, 1908.

The author states in his preface that it is sometimes said that medical students learn many things which they will never need in subsequent practice, and in subsequent practice learn many things which as students they never learnt, and he has prepared this little book with the object of meeting the latter fault. After some preliminary statements concerning "cautions and precautions," he deals with medical evidence and medical witnesses, with medical statistics and reports, with the law of defamation in relation to medical practitioners, with negligence and malpractice in medical practice, with coroners' cases and limitations of medical evidence. Physicians in general have so little conception of the position which they hold in relation to the law, whether they are practicing their profession or testifying in court, that this compilation of medicolegal facts fills a very distinct want.

THE CURE OF RUPTURE BY PARAFFIN INJECTIONS. By Charles C. Miller, M.D. Oak Printing Co., Chicago, 1908.

This brochure of 80 odd pages, based apparently on an experience of ten cases, lauds paraffin as a method of curing hernia because of the simplicity of the procedure and

because it can be carried out in the physician's office, the patient returning home immediately after his treatment. Miller states that hospital surgeons may be expected to condemn the paraffin treatment of hernia since it will open to thousands of the profession a field which has heretofore been open to surgeons with hospital facilities only. The only preliminary for the successful paraffin injection seems to be what the author calls experimental injections. He advises that the carcass of a small animal should be secured, and that the operator should become expert by making numerous injections into the tissues of this animal and subsequently carefully dissecting it. He exhibits a preference for either a dead cat, rabbit, or chicken. The author states that antiseptics cannot be as freely used upon the hands of the operator as upon the skin of the patient, but believes it is well to scrub the hand with a soap solution which contains formaldehyde and thereafter wash in 70-per-cent alcohol. The further advantage of the author's method is that it is possible to operate on several patients without resterilizing the syringe. He further gives the sage advice never to use a syringe which leaks.

The case reports are extremely instructive. The first patient was a female, twenty-eight months old, suffering from umbilical hernia. Four months later it is stated that the overlying skin was somewhat red but not sensitive. There is no mention made as to whether the hernia was or was not cured. It is evident, however, that the patient survived for four months. The next case was a coming three-year-old child, the site of the hernia, as large as a walnut, not being mentioned. The result was admirable, examination two months later showing no recurrence. In a case twenty years old a somewhat inadequate diagnosis of bubonocele was given; for the after-treatment it was noted that codeine was administered in quarter-grain doses every two hours. The last report from this case is June 25, 1905, two months after operation, the surgeon then finding that there was no impulse. This book was published in 1908; from the case reports, however, the author seems to have made his last injection August 2, 1906. He has at least proved that paraffin injections, even though they may not cure, are not necessarily fatal.

GLANDULAR ENLARGEMENT AND OTHER DISEASES OF THE LYMPHATIC SYSTEM. By Arthur Edmunds. Hodder & Stoughton, London, 1908.

It is specifically stated that this small volume is not intended as a treatise on diseases of the lymphatic system, but rather is it confined in its scope to the consideration of those pathological conditions in which affections of the lymphatic glands constitute the essential features of the disease. The first chapter is devoted to general anatomical considerations, this dealing also with the minute anatomy. After a general discussion of the principles of diagnosis, cellulitis is taken up with an incidental mention of Ludwig's angina. Thereafter erysipelas is considered, in the treatment of which ichthyol, in 25-per-cent solution, is given the place of first importance. In the treatment of retropharyngeal abscess incision along the posterior border of the sternomastoid muscle is advised, the author stating that it is in these cases that the value of wearing india-rubber gloves is especially seen, since thus the operator can insert his naked finger into the mouth during the first stage of the operation and then put on the glove for the final treatment of the wound. These retropharyngeal abscesses are reached by first dividing the skin; the forefinger of one hand is inserted into the mouth, which is gagged widely open; the surgeon then takes a pair of sinus forceps in the other hand, and by a process of blunt dissection works his way behind the carotid sheath toward the abscess cavity, the position of which is determined by the finger in the mouth.

Under the heading Lymphatic Enlargement and General Diseases, syphilis and bubonic plague are briefly considered. The major part of the book is devoted to tuberculous glands, the vaccine treatment receiving commendation. There is a brief men-

tion of the status lymphaticus, its relation to sudden death and the theories concerning it. Lymphatic insufficiency, filariasis, dilatation of the lymphatic vessels, lymphadenoma, lymphango-endotheliomata, lymphosarcoma, secondary malignant growths, and the treatment of inoperable malignant glands form interesting chapters in this excellent book. Under the last heading a number of remedies are given, it is true without enthusiastic indorsement, which might have well been omitted. Among these may be mentioned soap and violet leaves. The dose of the latter is 30 violet leaves a day.

NOTES AND QUERIES.

"MR. DOOLEY" ON PSYCHOTHERAPEUTICS.

The following highly amusing communication, appearing in the *Boston Medical and Surgical Journal* of October 22, 1908, is so apropos that we present it to our readers—(Ed.):

CHICAGO, Oct. 16, 1908.

MR. EDITOR: "Have ye read of this new thing they call sycotherapewticks that's privalint in Boston?" asked Mr. Dooley, as he laid aside the daily paper and turned to Mr. Hennessy.

"No. Is it ketchin'?" demanded Hennessy, anxiously.

"Sure it's not a disa-ase at all, at all," replied Mr. Dooley in his most professorial manner. "It's a new rimidy."

"Glory be!" exclaimed Mr. Hennessy. "Is it ha-ard ter swally?"

"Faith, it isn't like Father John's midicine or anny iv thim things," went on Mr. Dooley. "It's this way: Boston is a sthate iv moind, an' whin anny wan sickens there it's th' moind that gits attintion. F'r insthance, whin little Indicutt begins ter pine away an' th' nosepiece iv his specs has ter be thrimmed with fur ter keep th' metal fr'm pressin' on his poor little brain, an' he spinds his nights huntin' th' snark an' ither mana-a-tein' game in th' heart iv darkest A-africa with Teddy Rosenfelt, thin he's ripe fer sycotherapewticks."

"It's like casther ile, thin," ventured Mr. Hennessy.

"Ye talk like an omadhaun!" snapped Mr. Dooley, impatiently. "It's nawthin' iv th' koind. No, they call in th' pasther iv th' church. 'Ah, me little man, it's obsissed ye are,' sez he. 'It's a bad case iv th' dissoshiashun iv th' persona-ality ye have,' sez he, an' be a quick pass iv th' hand he lands little Indicutt inter a sthate iv hipno-osis which is th' thrade name f'r a kind iv nearslape. In this condition the poor little divil is complately at th' good man's mercy, an' th' secret wurrukin' iv his moind is as clear ter th' pasther as th' spring waters ye see advertised in th' magazines—if ye believe th' advertoisements. In less time than it takes ye ter impty a can iv beer, Hinnissy, th' boy's moind is spiritooly dhry-clinsed iv its obsissions and th' boy comes back ter airth or as near there as they iver get in Boston. 'Lave him take an exthry coorse in thransindintal ferlosofy,' says th' good man in partin' fr'm th' overjiyed parents. 'It'll kape his attintion off iv himsilf. But be careful how ye expose him ter th' frish air.'"

"It bates th' divil what leps science is makin'!" exclaimed Hennessy, when his powers of speech returned.

"An' they threat th' grown-ups th' silfsame way," went on Mr. Dooley, full of his subject and unmindful of his friend's comment. "Whin wurruk is slac' at th' foundhry and th' father iv th' fam'ly doesn't know where th' price iv th' next pot iv baked beans is comin' fr'm, ter say nawthin' iv th' rint an' th' other lux'ries iv life, he begins ter recognize th' simtims iv a refracthry subconshus—such as cowld feet, an' an inability ter look th' landlord an' th' bo-otcher straight in th' face—an' drops in ter th' sychotherapewtick clinic fer afthernoon tea and ither threatmint."

"An' how does that hilp him on th' rint

an' th' bo-otcher question?" asked Mr. Hennessy, critically.

"That's simple," replied Mr. Dooley. "He goes away full of tea, angel cake, an' be-yewtiful sintimints that inable him ter rise above his throubles, and whin th' grasp-in' landlord an' th' bo-otcher with th' Armour-clad hea-art begin ter do sintry duty before his dhoor in comp'ny with th' ither wolves, th' poor man retires inter th' subcellar iv conshusniss an' puts up th' amnashia shutters, which is a sure protecshun agin painful mimries."

"Wunderful! wunderful!" ejaculated Mr. Hennessy.

"Th' same threatmint applies ter all th' ither human ills," continued Mr. Dooley. "If th' hea-art gets inter a frolicksome mood an' takes ter skippin' beats up an' down th' spine; if th' stummick contrac's th' playful habit iv telescopin' itsilf inter th' dhudeenum; if th' rest iv th' organs refuse ter wurruk undher union rhules, it's sycotherapewticks that's needed."

"But what does sycotherapewticks ra-ally mane?" asked Hennessy, with a dazed expression.

"That's what no wan seems ter clearly undherstan'," replied Mr. Dooley. "As near as I can make out, it's a spacies iv spiritool flim-flam. We are all born in orig'nal sin, Hinnissy, an' th' divil's in iv'ry wan iv us. Ye may think ter dhrive him out be baptism, but don't fool yersilf. He's still with ye in as manny dif'r'nt forms as ye have fingers an' toes. That's why ye suffer fr'm a mooltiplica-ation iv th' persona-ality. Whin th' ould boy gets inter yer liver, ye're wan feller, an' whin he sthrikes yer big toe in th' shape iv th' gout ye're another. Ye know yersilf, Hinnissy, that whin ye go home an' swear at th' ould woman an' caress th' childer with th' wooden ind iv th' broom, ye're not th' same ja-anial spirit ye are whin ye're sthandin' up ter th' bar an' somewan else is orderin'. It's th' divil that's at th' bottom iv all our sufferin', an' it takes th' pasther an' his sycotherapewticks ter dhrive him out."

"An' are there no more reg'lar docthers in Boston like ould Doc Sullivan here?" asked Hennessy.

"Very few, I hear," replied Mr. Dooley. "Them as haven't made their forchun be thrimmin' off the appendix are now sellin' fairy stories written be spiritool sycollargists."

"But even sthill I don't clearly undherstan' th' meanin' iv sycotherapewticks," protested Hennessy.

"That's just the *crooks* iv the situashun, as they say in argymints. Ye are in the same box as th' pasthers, Hinnissy."

"An' ye say that Boston is on'y a sthate iv moind?" queried Mr. Hennessy.

"I do," affirmed Mr. Dooley.

"Thin it must be an awful bad sthate ter be in," finished Hennessy, sententiously.

Very throoly yours,

J. W. C.

(With humble apologies to Mr. F. P. Dunne.)

Correspondence.

IPECAC IN DYSENTERY AND HEPATITIS.

To the Editor of the THERAPEUTIC GAZETTE.

SIR: I notice in the THERAPEUTIC GAZETTE for September, page 638, that ipecacuanha is extolled very highly as a new remedy in acute hepatitis. The author has surely failed to look up the history and treatment of acute hepatitis following tropical dysentery. By referring to Murchison's Clinical Lectures on Diseases of the Liver, second edition, issued in 1877, page 136, you will find that Murchison recognized the utility of ipecacuanha in hepatitis; also Dr. C. Maclean, in Reynold's System of Medicine, third volume, page 337, recognized its beneficial effects in tropical dysentery and hepatitis following.

I simply call your attention to the fact merely to show that at least some of the newly discovered remedies for old diseases are new only to the later investigators.

Respectfully yours,

THOS. M. WRIGHT.